

Empowerment and Exploitation: Essays in Economic History

by

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To my parents, my partner, my colleagues, and my union who have seen me through this journey.

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Preface

Chapters 2 and 3 of this dissertation are original, unpublished, and independent work by the author, Rob Gillezeau. Chapter 4 is authored jointly with Professor Warren Whatley and has been previously published in the *American Economic Review*.

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Abstract

The chapters of this dissertation all fall at the intersection of economic history and public policy. While the topics are historical, they all provide results that are important for current policy makers. The first chapter is an introduction while chapters two through four are self-contained papers.

The second chapter of this dissertation, entitled “Did the War on Poverty Stop the 1960s Race Riots?,” uses recently digitized records of War on Poverty spending to determine whether anti-poverty spending was successful in discouraging the 1960s race riots. Using both a cross-sectional instrumental variables strategy and a panel approach, funding for the Community Action Program (CAP) is found to have decreased the number of riots by 15-60% and the intensity of rioting by 45-54%. Within the CAP, politically motivated empowerment programs such as community organizing and legal assistance proved more effective at halting the rioting than economic programs. The results provide suggestive evidence that the root cause of the 1960s riots may have been political disempowerment.

The third chapter of this dissertation, entitled “War Contracts and Break Points: The Economic Geography of American Trade Unions,” examines the spatial and temporal evolution of the trade union movement in the United States from the late 1930s until the present in order to determine whether changes in union membership are typically random in nature, driven by locational fundamentals, or governed by increasing returns. In order to causally determine the relationship, the compact between the federal government and trade unions during World War II is employed as an exogenous, region-specific shock to union membership. The results indicate that increasing returns to unionization have played an important role in the evolution of the labour movement. This result is driven by unions choosing to invest their organizing resources in high-density states. Firms are also less willing to fight union drives in high-density states. These findings have important implications for the future of the labor movement, suggesting that a temporary government intervention in labor relations can have a long-lasting impact on union membership.

The fourth chapter of this dissertation, entitled “The Impact of the Transatlantic Slave Trade on Ethnic Stratification in Africa,” argues that the transatlantic slave trade increased the degree of ethnic heterogeneity in contemporary Africa. Using both correlational and causal instrumental variables analyses, we find an economically significant positive relationship between historical slave exports

and contemporary ethnic heterogeneity and fragmentation. This relationship is robust to changes in the scheme for drawing ethnic boundaries and the choice of observational unit. The strong positive relationship between ethnic fractionalization and slave exports found in this paper suggests that increased ethnic fractionalization may have been a prominent factor in African underdevelopment. The results also suggest that controlling for ethnic fractionalization will result in underestimates of the impact of slavery on development.

Chapter 1

Introduction

This dissertation looks back into the economic history of the United States and Africa to gain a greater understanding of the causes and consequences of exploitation and the tools available for working people to empower themselves. It spans from the era of the transatlantic slave trade to the growth and decline of the American trade union movement. All of the chapters in this dissertation are grounded in the intersection of labour economic methods, economic history and public policy. And they are united in that they all strive to achieve causal identification.

The second chapter of this dissertation, entitled “Did the War on Poverty Stop the 1960s Race Riots?,” addresses a unique period of empowerment and exploitation in American economic history. Throughout the latter half of the 1960s, the United States came face-to-face with a history of racial exploitation, as hundreds of riots erupted in African American communities across the United States. And it was in this same era, that President Lyndon Johnson launched his unconditional War on Poverty, which as a part of its mandate attempted to empower America’s poor. This chapter uses recently digitized records of War on Poverty spending to determine whether anti-poverty spending was successful in discouraging the 1960s race riots. Using both a cross-sectional instrumental variables strategy and a panel approach, funding for the Community Action Program (CAP) is found to have decreased the number of riots by 15-60% and the intensity of rioting by 45-54%. Within the CAP, there is suggestive evidence that politically motivated empowerment programs such as community organizing and legal assistance proved more effective at halting the rioting than economic programs. The results provide suggestive evidence that the root cause of the 1960s riots may have been political disempowerment and that the best policy intervention was to help empower the disenfranchised.

The third chapter of this dissertation, entitled “War Contracts and Break Points: The Economic Geography of American Trade Unions,” turns to one of workers’ most valuable tools for self-empowerment: the trade union. It examines the spatial and temporal evolution of the trade union movement in the United States from the 1930s until the present in order to determine whether changes in union membership are typically random in nature, driven by locational fundamentals, or governed by increasing returns. In order to causally determine the relationship, the compact

between the federal government and trade unions during World War II is employed as an exogenous, region-specific shock to union membership. The results indicate that increasing returns to unionization have played an important role in the evolution of the labour movement. This result is driven by unions choosing to invest their organizing resources in high-density states. Firms are also less willing to fight union drives in high-density states. These findings have important implications for the future of the labor movement, suggesting that a temporary government intervention in labor relations can have a long-lasting impact on union membership.

The fourth chapter of this dissertation, entitled “The Impact of the Transatlantic Slave Trade on Ethnic Stratification in Africa,” turns to the long-run impacts of exploitation across Africa. It argues that the transatlantic slave trade increased the degree of ethnic heterogeneity in contemporary Africa. Using both correlational and causal instrumental variables analyses, we find an economically significant positive relationship between historical slave exports and contemporary ethnic heterogeneity and fragmentation. This relationship is robust to changes in the scheme for drawing ethnic boundaries and the choice of observational unit. The strong positive relationship between ethnic fractionalization and slave exports found in this paper suggests that increased ethnic fractionalization may have been a prominent factor in African underdevelopment. The results also suggest that controlling for ethnic fractionalization will result in underestimates of the impact of slavery on development.

Together, these three chapters bring new insights to the long-run consequences of historical exploitation and the institutions through which working people may empower themselves.

Chapter 2

Did the War on Poverty Stop the 1960s Race Riots?

2.1 Introduction

Rioting remains prevalent today and can be a massively destructive force.¹ London faced five days of massively destructive riots in 2011 while Paris and other French cities experienced weeks of rioting in 2005.² In this paper, I study the most prominent outbreak of American rioting, which struck hundreds of cities across the United States in the 1960s. The outbreak of rioting in the 1960s provides an ideal laboratory to study the causes of riots and evaluate the efficacy of interventions designed to prevent them.³ The 1960s riots were enormously destructive (Collins and Smith, 2007; Collins and Margo, 2007), however, we understand little about them.⁴ In particular, we have little understanding of the effectiveness of government efforts to halt rioting. There is no economic research that attempts to identify the causal impact of an anti-riot program beyond police or military involvement in a developed country.

This study seeks to answer the question of whether a targeted government anti-poverty program can be effective in preventing or halting rioting. In particular, I examine whether the Johnson administration's funding for the Community Action Program (CAP) was successful in discouraging the 1960s race riots. Just as these riots began to break out across the United States, Lyndon Johnson

¹There are a number of contemporary examples of rioting in the United States. The most recent example is the outbreak of rioting in Ferguson, Missouri.

²In both the 2011 English riots and the 2005 French riots, the price tag of the rioting easily ran into the hundreds of millions of dollars in short term costs alone (Dodd, 2011).

³It is a particularly effective case study as the 7 year duration allowed sufficient time for a government policy response. More recent outbreaks of rioting have typically been days long at a maximum.

⁴To date, neither economists nor sociologists have managed to develop a causal explanation, although some progress has been made. We know that the riots tended to occur in moderately poor areas (Carter, 1986; Chandra and Foster, 2005; Myers, 1997) facing ethnic competition for resources (DiPasquale and Glaeser, 1998; Myers, 1997). We also know that enforcement played a role in that having either too few or too many police officers (Carter, 1987) could contribute to the outbreak of rioting. And we know that the proximate cause tended to involve some type of interaction between the police and members of the African American community.

launched his “unconditional War on Poverty.”⁵ After the devastation wrought in the Watts Riot and the escalation of rioting across the country, President Johnson turned to the Community Action Program (CAP) and its anti-poverty mission as the federal government’s best chance to end the riots (Cazenave, 2007; Germany, 2004), which were undermining the Democrats’ political agenda.⁶ Most CAAs employed a two-pronged approach to combating poverty and the riots: they empowered local citizens through community organizing and coordinated federal grants meant to directly alleviate poverty. Critics, contemporary and otherwise, have argued that the CAP may have actually had a perverse effect and helped to trigger many of the riots (Cazenave, 2007; Sowell, 2004)

The empirical analysis employs both cross-sectional and panel approaches to explore the relationship between rioting and CAP outlays. I begin with a basic series of OLS regressions to get a sense of the correlational relationship. However, these results are inconclusive as a result of the significant endogeneity inherent in the relationship between CAP outlays and rioting. To attempt to resolve this problem, I take advantage of the panel dimension of both the rioting and CAP data to conduct a panel analysis of total and cumulative CAP outlays.⁷ These results also find a large, negative treatment effect with a robust set of controls, time trends, and fixed effects. However, it remains possible that, even with a rich set of controls, a non-observed time-variant variable is correlated with the error term. Thus, in a third approach, I employ an event study analysis of how riot behaviour changed after the initial funding of a CAA in a county. This approach is attractive as it may solve the endogeneity problem. The results from this step indicate that the presence of a CAA may have reduced rioting, but there is a meaningful pre-trend that cannot be completely eliminated. Finally, I return to the cross-section and employ an instrumental variables strategy based on Democratic attempts to expand their voting base to achieve identification. In particular, the strategy takes advantage of the fact that the Johnson administration attempted to solidify their political support in “growth” areas through greater War on Poverty spending. The results indicate that CAA outlays significantly decreased both the number and severity of rioting and that outlays had a long-lasting impact on riot occurrence. Depending on the identification strategy, general spending on the CAP decreased the the number of riots by 15-60% and the intensity of rioting⁸ by 45-54%⁹. This is a remarkable treatment effect given that combating the riots was not the primary goal of the program.

⁵This was truly a massive expansion in direct federal government funding to communities that was intended to aid 35 million Americans in their struggle to escape from poverty. It amounted to over 15 percent of the federal budget by 1970 before its dismantling, although a number of its more successful programs have lived on.

⁶It is important to acknowledge that the roll-out of the nation’s CAAs was already underway when the riots began and their funding plans had, to some degree, already been determined for future years.

⁷I am able to divide spending by program type using this approach.

⁸As measured by an index of deaths, injuries, arrests, cases of arson, and days of rioting.

⁹The lower bound of the treatment effect comes from the panel analysis while the upper bound of the treatment effect is from the instrumental variables analysis.

In addition, I am able to divide spending by program type in the panel analysis. Community organizing and CAA administration were the most effective methods of preventing riots,¹⁰ rather than the provision of direct anti-poverty services. These results are suggestive of the possibility that the 1960s race riots may have been driven by political disempowerment of poor African Americans rather than purely as a result of economic poverty. Given the similarity of the recent riots in England and France to the 1960s race riots, these results suggest that economic programs may not be the most effective policy response to prevent future rioting.

2.2 Historical Review

2.2.1 The 1960s Riots

Between 1964 and 1971, race-related rioting broke out in hundreds of cities across the United States.¹¹ The riots occurred in cities of all sizes,¹² but the worst rioting occurred in Detroit, Los Angeles, Newark and Washington, DC.¹³ The riots came to national attention following the Harlem Riot of 1964 and the devastation of the Watts Riot in Los Angeles in 1965. They continued to intensify in 1966 and 1967, peaking in the aftermath of the assassination of Dr Martin Luther King Jr.¹⁴ In Figure 2.1 of the Appendix, I plot the occurrence of the riots.¹⁵ The number of riots peaked in 1968, from which point they began to dwindle shortly after the election of Richard Nixon.

The riots left dozens dead and thousands injured.¹⁶ Furthermore, there were thousands of arson cases and other destructive acts. While it is difficult to quantify many of the long-lasting effects of the riots we know that hundreds of millions of dollars in property damage occurred¹⁷ and the majority of the damaged property was that of African Americans (Sears and McConahay, 1973).

¹⁰This is true regardless of whether the metric used is the number of riots or severity.

¹¹These were not the first race riots in the United States. The severity of the rioting was matched by the race riots that occurred during World War II. However, the 1960s riots were more frequent and occurred across the nation.

¹²Similarly, cities of all sizes realized different frequencies of riot occurrence. Approximately half of cities experienced more than a single riot.

¹³The Detroit Riot of 1967 proved the mostly deadly of the era with 43 persons losing their lives. This is followed by the Watts Riot in Los Angeles, which left 34 dead. The most severe incidents of rioting are summarized in the Appendix.

¹⁴In the aftermath of the assassination of Dr King, the extent of the rioting was so great that Collins and Margo (2007) are able to use the weather following the assassination as an instrument for riot occurrence.

¹⁵There is an important seasonal component to rioting captured in the figure: rioting overwhelmingly occurs in the spring and summer months.

¹⁶According to the database assembled by Carter (1986), 228 people were killed, 12,741 were injured, and 69,099 were arrested.

¹⁷Estimates of the property damage have been created for some of the larger riots. For example, it is estimated that the Watts Riot resulted in 40 million dollars in property damage. The Detroit Riots are estimated to have resulted in 45 million dollars in damage (Harris and Wilkins, 1988).

There were also long-term consequences for the African American community in addition to this property damage. Collins and Margo (2007) and Collins and Smith (2007) find that the rioting caused a depression in the value of African American property in cities and worsened labour market outcomes for inner city African Americans. The riots may have also hastened the white flight from many of America's largest cities (Boustan, 2010; Collins and Margo, 2007), which had already begun. These are likely only a subsection of the substantial economic costs that many inner city African Americans have faced as a result of the rioting.

Anecdotal and survey evidence (Sears and McConahay, 1973) collected in the aftermath of several of the riots suggests that they were not planned occurrences. Rather, the evidence indicates that the riots were spontaneous events triggered by some a perceived injustice (Bauman, 2008). The spark was often a perceived injustice against the African American community by a police officer.¹⁸ For example, the Detroit Riot of 1967 was triggered by a police raid on a "blind pig" in the downtown core.¹⁹ The club had more occupants than the police had expected and, as they were taken out onto the street, it drew the attention of people living nearby (Singer et al., 1970) who were unhappy with the police action. The situation escalated into the most deadly riot of the 1960s. Similarly, the Watts Riot was triggered by the arrest of a young man for driving under the influence. During the arrest, his mother appeared at the scene (Sears and McConahay, 1973); a crowd gathered and the Watts riot began.

2.2.2 The War on Poverty & The Community Action Program

The War on Poverty was designed and coordinated in Washington under the direction of Sargent Shriver and the Office of Economic Opportunity (OEO). The program had its historical roots in many of the programs of Roosevelt's New Deal and its contemporary roots in Kennedy's Committee on Juvenile Delinquency.²⁰ The Community Action Program (CAP) and its physical manifestations, Community Action Agencies (CAAs), were at the heart of the War on Poverty, being charged with coordinating the fight against poverty at the local level. The Economic Opportunity Act of 1964 defines a CAP as a program that: "mobilizes and utilizes resources, public or private, of any urban or rural [area]", "provides services, assistance and other activities of sufficient scope and size to give promise of progress toward elimination of poverty..." and "is developed, conducted and administered with the maximum feasible participation of residents of the areas and members of the group served" (USA, 1976). The CAP was intended to differ from traditional approaches to combat poverty in that the poor themselves were intended to serve as the

¹⁸Carter (1987) has studied the u-shaped relationship between the size of the local police force and riot occurrence.

¹⁹A blind pig is an after-hours club that illegally sells alcohol.

²⁰The latter, in particular, served as the basis for the War on Poverty, serving as testing ground for many of the concepts later employed in the War on Poverty.

organizers.

In the original formulation of the War on Poverty, Community Action Agencies were not envisioned as service providers. Rather, they were designed as coordinating entities, which were to give voice to the poor. They would be independently governed by local government officials, members of anti-poverty groups, and community residents. Each board was to consist of at least one-third local residents, one third local government officials, and at most one-third representatives of the private sector. This division of representation generally held in practice, although the members were typically appointed rather than elected by the community. CAAs could be very different on the ground: some were controlled by local political machines while others were genuine, grass-roots organizations. Many CAAs were either founded or staffed by organizers from the most prominent civil rights organizations including the NAACP and NUL (Paden, 2011). Given their control over significant amounts of federal funding, there were regularly turf wars within local political machines and civil rights organizations over the formation of new CAAs, their staffing, and the allocation of funds (Paden, 2011).

In their initial formulation, these CAAs were to be tasked with three goals by the Office of Economic Opportunity: to coordinate service providers, to organize the poor towards social action, and to empower the poor by giving them agency over the War on Poverty at the local level. This initial vision for CAAs, however was quickly transformed and they were given a new mandate to be the actual service providers (Sundquist, 1969) with a de-emphasized coordination role. Even critics of this transition recognized that service provision by CAAs would have a dramatic impact at the local level (Brauer, 1982) by bypassing the exiting bureaucracy and getting resources directly to the poor. CAAs were able to apply to the OEO for funding to offer these services to the community.²¹ A vast array of CAP programs tackled poverty from every angle: VISTA (Volunteers in Service to America), the Jobs Corps, Head Start, consumer services, legal support to challenge existing institutions, health services and many more (Levitan, 1969). There is evidence, however, that the focus on service provision may have discouraged the organizing role that CAAs were intended to play as initially envisioned by Sargent Shriver.²²

2.2.3 The Interaction of the CAP and the Riots

The goal of the War on Poverty and the Community Action Program under Sargent Shriver was to economically empower America's poor by making them smarter, happier, and healthier. And it was

²¹Governors had the right to veto local allocations, however, all funding allocations were made directly to the local CAA. In addition, the director of the OEO could override these vetoes.

²²In a survey of more than 50 CAP program directors, Clark and Hopkins (1969) find that while most CAPs offered programs such as Head Start or health services, only five CAPs operated programs with the goal of "organization for community social action".

also the belief of President Johnson that “the only genuine, long-range solution for what has happened [the riots] lies in an attack-mounted at every level—upon the conditions that breed despair and violence” (Harris and Wilkins, 1988).²³ Johnson essentially believed that a core anti-poverty mandate would be successful in putting an end to the rioting. Economic empowerment, acting through programs such as the Jobs Corps, health services, and even the expansion in the food stamps program may have discouraged urban rioting through several pathways. For example, if CAAs provided an exogenous shock to the income of individuals facing the decision to riot they would face a higher opportunity cost of imprisonment. Rioting may have also simply been signaling mechanism, as described later in this paper, for services and their provision removed the benefits of rioting. Finally, jobs at CAAs may have been directly allocated to many of the poor providing them with a stable income that would be at risk if they participated in rioting.

The other possibility is that CAAs’ efforts to politically empower the poor may have helped prevent rioting. CAAs were governed, in part, by the local poor and may have discouraged rioting by allowing the grievances of those in poverty to be addressed. The poor were guaranteed at least one third representation on each CAA council.²⁴ If rioting was intended to make a silenced voice heard, CAAs may have been able to meet that goal. The idea that rioting came out of grievances against the state was held by many mayors. Mayor Lindsay of New York City created a special task force, associated with the CAP, to be dispatched to poor neighbourhoods to determine the nature of their grievances (Reeves, 1968). These grievances could take many forms: from poor housing and sanitation to the rage felt by so many after the assassination of Dr. King. For example, in Newark, the local CAA was governed by an alliance of militants and moderates. After the assassination of Dr. King the leader of the CAA, Tim Still, paid 300 youths 5 dollars each to head to the ghetto to remind angry residents of Dr. King’s message of non-violence. This act of community organizing has been credited with preventing a deadly outbreak of rioting in Newark (Cook, 1968). This mechanism would be consistent with the “social disorganization” hypothesis of rioting proposed by Downes (1968) under which there exists a group of individuals who are somehow isolated from society. As such, they are not significantly influenced by social norms and do not have access to the institutions established to consider grievances. It would also be consistent with Lieberman and Silverman (1965)’s “political representation” hypothesis in which a politically excluded group turns to rioting or other violence to have their demands heard.²⁵

While the conventional wisdom suggests that the Community Action Program either

²³This mechanism would be consistent with the “deprivation” hypotheses presented by sociologists. The two most prominent “deprivation” hypotheses are the “absolute deprivation” hypothesis proposed by Olson (1963) and the “relative deprivation” hypothesis proposed by Gurr (1971). These theories argue that living in a condition of absolute poverty or poverty relative to others encourages people to riot to improve their living conditions.

²⁴If disenfranchised they had the ability to form a new private CAA that could then compete for federal funding.

²⁵Additionally, it would be consistent with many political economy models in which the policy emphasis is placed upon the “median” voter or factions are able to capture rents prior to their reaching the community.

discouraged rioting or had a negligible impact, there are plausible hypotheses that suggest that the CAP may have had the opposite impact. For example, Sowell (2004) argues that it is possible that the efforts of CAP to empower poor African Americans may have helped trigger the riots or intensified them. It is possible that CAAs created economic and political expectations that they were unable to meet, resulting in frustration and rioting.²⁶ This idea is raised by contemporary scholars such as Clark and Hopkins (1969) who argue that “where such programs themselves have been subverted or diluted, the response of the poor and their surrogates may be a rising frustration and militance or a return of apathy”. For many of the poor, there was reason for frustration. The promise of elected representation on CAA boards was often not realized as government officials moved to appoint representatives (Clark and Hopkins, 1969). In many cities, there were power struggles between the municipal government and the poor²⁷ for control of CAAs. There is evidence from the Watts riot that unmet expectations for the War on Poverty may have helped drive the riots. According to Bauman (2008), early commentators agreed that the failure of Los Angeles to settle on a leadership group for its CAA contributed to the Watts Riot. Mayor Yorty stated that “one of the riot inciting factors [was] the deliberate and well publicized cutting off of poverty funds” (Bauman, 2008) to the city of Los Angeles. Some have interpreted the Watts riot as more than a rebuke of Yorty, but rather an attempt to attract federal dollars to Watts (Sprinkles, 1971).

The form of political empowerment itself may have provoked rioting as the CAP tended to promote anti-establishment organizing. According to Clark and Hopkins (1969), CAAs’ effectiveness depended “on challenging that same order and transforming society itself,” which could take on a variety of forms, including a riot. In 1965, CAAs throughout the United States were issued a *Community Action Program Workbook*, which provided suggestions for aiding the poor. It suggested that increasing the political clout of the poor was essential to community action’s success and argued that “organizing protest demonstrations” (Cazenave, 2007) was an effective method of achieve this goal.²⁸ Mayor Shelley of San Francisco cited this workbook at a US Conference of Mayors meeting, claiming that “OEO officials were attempting to incite the poor to engage in social protest at both the local and national levels” (Cazenave, 2007). In the aftermath of the riots, many politicians and pundits came forward placing blame for the rioting on CAA employees that the CAP had to defend itself against (Cazenave, 2007). At Congressional hearings, members of the Newark city council and others accused CAA members of playing “an important part in setting off the riots” (Cazenave, 2007) and inciting hatred against whites. There were articles in the press covering efforts by the CAP to combat this discourse (Unknown, 1967a). We do know of cases in

²⁶This would be consistent with the sociological theories of Berkowitz (1968).

²⁷The poor were not without allies in these struggles; the federal government often sided with community members rather than municipal or state officials.

²⁸This workbook was referenced during congressional hearings as evidence that the Community Action Program was politically motivated and militant.

which CAP workers were arrested for inciting a riot (Unknown, 1967b); in addition there exists documentation of several CAP rallies that escalated into rioting (Unknown, 1968). In addition to the potential for violence against local authorities, there was competition for scarce resources amongst official and unofficial CAAs in the same cities. Since many of these unofficial CAAs tended to be based on ethnicity (Bauman, 2008), this competition could lead to violent confrontations between these rival groups (Cazenave, 2007; Olzak et al., 1996).

These potential mechanisms for CAAs influencing riot occurrence are not mutually exclusive and it is likely that each occurred in different communities. Next, I discuss a possible signaling model that may underlie the interaction of War on Poverty funding and rioting and that is consistent with these mechanisms.

2.3 A Simple Model of Riots as a Signaling Problem

I model the decision to riot as a community-level signaling model problem (Spence, 1973) in order to gain greater insight into the relationship between the decision to riot, poverty, political disempowerment, and government allocations. This model is able to reflect situation under which CAAs may both increase and decrease the propensity to riot.²⁹

The agents in this model are the African American communities found in cities in the United States. I assume that there are two types of communities: impoverished (θ_I) and well-off (θ_W).³⁰ These two types differ over their value of θ ($\theta_I \geq \theta_W$), which is a parameter indicating both the level of poverty and segregation (or simply hardship) in the city. African American communities are aware of their own level of θ while the government is unable to view this variable directly. Communities, however, are able to convey a signal to the government by choosing a number of riots (equally interpretable as the intensity of riots) R , which are costly to undertake. Communities are assumed to benefit from federal anti-poverty spending G , which is provided by the government. As such, the normalized community-level utility is taken to be:

$$u_t(G, R) = G - C(\theta_t, R),$$

where C is the cost of rioting. I assume that the cost of rioting takes the following functional form:

²⁹Applying a global games framework to rioting can also provide valuable insights into individual and community behaviour.

³⁰Note that these communities could similarly reflect markers of local political empowerment.

$$C(\theta_i, R) = k_i f(R)$$

where $f()$ is increasing in R . k_i is cost multiplier that is a function of θ that differs in impoverished and well-off communities such that $k_W \geq k_I$. This assumption is reasonable as the opportunity cost of rioting should be greater in a well-off community. As is standard in such models, I assume that the utility functions satisfy the single crossing property such that the well-off community's indifference curve always has a greater slope than the impoverished community's indifference curve.

If the types were observable the government would provide $G_i = \theta_i$ units of federal anti-poverty spending to each community. If the types are not observable and there exists no signaling mechanism the government will provide $E(\theta) = \lambda \theta_I + (1 - \lambda) \theta_W$ units of federal anti-poverty spending to each community where λ is the proportion of communities that are impoverished.

In the signaling game, each city is given a type at random, after which each community must choose a level of riots. The government then observes the number of riots and decides upon a distribution of funds.

This game may result in a range of pooling and separating equilibria, however, since we clearly see some communities that do not riot and some that do, I assume that we are in a separating equilibrium. Additionally, I apply the intuitive criterion such that there only exists a single separating equilibrium. In this equilibrium, as displayed in Figure 2.5, impoverished communities choose $R_I^* = R^1$ and well-off communities choose $R_W^* = 0$. The government then provides a level of G to each community type such that $G(R_I^*) = \theta_I$ and $G(R_W^*) = \theta_W$.

This equilibrium, however, may be altered through the influence of pre-existing anti-poverty funding to CAAs. In the Sowell inspired model, the presence of a CAA in a community is assumed to decrease the value of k_i by an amount equal to $k_W - k_I$. If we assume that only a small fraction of well-off communities receive a CAA those well-off communities will choose a level of R equal to that chosen by the impoverished communities resulting in a semi-pooled equilibrium. If we consider the other extreme and introduce a CAA to all communities a separating equilibrium will be maintained with $R_I^* = R^2$ and $R_W^* = 0$ where $R^2 \geq R^1$. There exist various intermediate cases, some of which involve a 3-group separating equilibrium, but almost any version of such a model will result in an increase in the number of riots in equilibrium.

It is also possible that CAAs alter the underlying type of a community through anti-poverty programs, essentially transforming an impoverished community into a well-off community. This decreases riots in a method that requires little explanation: as long as a separating equilibrium is maintained (and it surely will be as the incentives to pooling for the impoverished type decreases),

more communities choose not to riot.

The key takeaway from the model is that there are plausible scenarios under which the CAP could have either increased or decreased rioting. It also shows that the CAP could decrease rioting regardless of whether the root causes were economic or political. This model is easily extendable to a multi-type or even a continuous type framework with very similar results. Also, it should be noted that this is a community-level game, but it is reasonable to assume that an individual decision process, similar to Glaeser and DiPasquale (1998), is underlying the model.

2.4 Empirical Analysis

In order to determine which factors are dominant, and hence the aggregate impact of the Community Action Program on rioting, I conduct a four stage empirical analysis. First, I perform a cross-sectional correlational analysis of riot severity or occurrence and spending. However, these results are inconclusive and subject to a significant endogeneity problem. Second, I take advantage of the time dimension of the data and conduct a panel analysis with a robust set of controls, fixed effects, and time trends to further specify the treatment effect. However, this approach is subject to endogeneity from time variant factors. Third, I attempt to resolve this endogeneity by determining whether rioting responds to the initial funding of a CAA using an event study approach. However, this approach only considers the extensive margin of treatment and has a pre-trend that is difficult to eliminate. Thus, I return to the cross-sectional data and employ an instrumental variables strategy to derive a causal estimate.³¹

2.4.1 Correlational Cross-Sectional Analysis

In this first stage of the empirical analysis, I use OLS to estimate the correlational relationship between riot occurrence or severity and CAA spending in the cross-section.

Data

The data contain over 3000 counties and super-counties.³² For each county, I have a range of economic and demographic covariates covering population, ethnicity, income, unemployment and other variables. The full list of covariates are listed in the Appendix. These variables cover the

³¹The cross-sectional analysis is important valuable as, although timing data is available, there is no of when CAP funds actually reach a community.

³²The results are robust to limiting the sample to counties with populations over 25,000, populations under 500,000 or those with at least 1000 African Americans.

range of covariates traditionally used in the sociological literature (Myers, 1997) that examines the 1960s riots. I also have detailed information for each county on the over 700 riots that occurred across the United States from Collins and Margo (2007). I construct two principal dependent variables using the riots data. The first measure is simply the number of riots that occurred in each county between 1964-1971. The second measure is an index of severity. This index is equal to the sum of the total share of arrests, deaths, injuries, and arson cases that occurred in each county from 1964-1971.³³ As additional robustness tests, I include various absolute measures of intensity including: the total number of days of rioting, the number of people killed, the number of people injured, and the number of arson cases.³⁴ The independent variables of interest (CAP spending and CAP spending by program type) are created from the archival records of the Office of Economic Opportunity. The CAP spending data cover the period 1965-1971 with a major gap in the data occurring in 1969. As such, the primary analysis only includes CAP spending from 1965-1968. In addition, I construct an indicator variable for the presence of a CAA in each county.

Figures 2.1 and 2.2 plot the occurrence and severity of the rioting over the time period. The two figures generally mirror each other, although there is significantly greater variation in riot intensity early in the period and significantly less variance later in the period. Figure 2.3 plots severity by killings, arson, arrests, and injuries and follows the same trends. Figure 2.4 plots the number of riots that occurred in each city over the period. It is a common misconception that cities experienced only a single riot. In fact, only 154 cities experienced a single riot. Cities large and small experienced multiple cases of rioting. For example, Benton Harbor, Michigan witnessed 4 riots while Washington, DC experienced 17 riots.

Figure 2.6 plots the establishment of CAAs and the number of counties that had received funding for at least one CAA. The figure shows that CAAs were initially funded in two waves in 1965 and 1966, with a handful of counties receiving funding for the first time in 1967 and 1968. The distribution of CAP outlays by year are displayed in figure 2.7. As is clear in the figure, War on Poverty outlays roll out slowly in 1965 ramping up to a peak in 1968.³⁵ The initial disbursement of outlays in 1965 was heavily targeted towards large cities with populations over 600,000. In 1966, outlays shifted to a more even urban-rural divide with outlays to regions with fewer than 150,000 people roughly equaling outlays to regions with a population over 600,000. In general, most of the CAA programs described in the Appendix ramped up along with overall CAA spending, although health care spending rolled out somewhat more slowly than other programs.

³³In other words, the index is equal to the number of arrests in city X divided by the number of arrests across all cities, plus the number of deaths in city x divided by the total number of deaths across all cities and so forth.

³⁴The results are also robust to the use of an absolute severity index, which is simply the sum of all severity components in a county.

³⁵Even at this peak, the War on Poverty accounts for only about 1% of the federal budget.

Methodology

For the baseline cross-sectional analysis, I employ a simple OLS regression framework. In general, I include regional fixed effects and correct the standard errors for heteroskedasticity. These regressions can be expressed as the following linear specification:

$$R_i = \alpha + \beta O_i + \gamma X_i + e_{it} \quad (2.1)$$

Where R represents the number of riots or the severity of rioting in county i , O is the per capita value of CAA outlays to the county, and X is a vector of covariates, including state or regional controls.

Results

In Part A of Table 2.3, I present results from the OLS regressions of the number of riots in a city on total Community Action Agency outlays, an indicator for the presence of at least one CAA, and a vector of socio-economic covariates. Part B of Table 2.3 presents similar results for the severity index. These results are inconclusive. In general, CAA outlays per capita appear to be positively correlated with riot occurrence and intensity, although the presence of a CAA is negatively correlated with riot severity. It is also worth noting that the R^2 values from the results, as it is clear that the variables are much more effective at explaining the occurrence of rioting rather than the actual severity of the riots.

Clearly, there are any number of sources of endogeneity biasing the results here. In particular, the War on Poverty was targeted towards many African American communities that were highly unequal in both income and segregationist attitudes, which could easily bias the results. In the remaining 3 sections, I implement alternative approaches to better understand the true nature of this relationship.

2.4.2 Panel Analysis

In order to further investigate the intensive margin of being treated by a CAA, I make use of the imperfect timing data available for CAP outlays in an effort to take advantage of the rich temporal variation in rioting and CAP spending in a fixed effects OLS analysis. Through county-specific fixed effects, this approach eliminates time-invariant biases found in the OLS approach.

Data

The panel analysis spans 1964-1968 and includes all of the 3000 plus counties present in the cross-sectional analysis. Time periods are divided by year, although the results from the analysis are robust to a monthly analysis. While the riots data includes the exact date of riot occurrence, the CAA outlays data do not have the same degree of precision. The only date available for the outlays is the signing date of each individual outlay; there is no information available as to when those funds are spent on a particular program. As a result, I use this date as if it is the actual date at which the money was spent and, it is for this reason, that I have chosen to present annual rather than monthly results. This is also important as results may occur with a lag.

Methodology

I consider two sets of panel specifications for the analysis. In the primary panel regression, I regress riot occurrence or severity CAA outlays provided in the current year in an annual panel. The specification for this OLS regression is:

$$R_{it} = \alpha_i + \beta O_{it} + \gamma_{u(i)t} + \delta_{u(i)t} + \pi X_{it} + \Pi PR_{it} + \varepsilon_{it} \quad (2.2)$$

Where R_{it} is the number of riots in county i in year t , α_i is a set of county fixed effects that accounts for time-invariant facts and constant unobservable factors, O_{it} are CAP outlays provided to county i in year t , $\gamma_{u(j)t}$ is a set of urban status-by-year fixed effects, $\delta_{u(i)t}$ is a set of year or state-by-year fixed effects that captures national trends in funding, X_{it} is a set of county demographics interacted with a linear time trend, PR_{it} is a set of covariates measuring past rioting in county i , and ε_{it} is an error term.

In second set of panel specifications, O_{it} is replaced with the sum of CAA outlays provided to county i prior to year t . I repeat these specifications with outlays divided by CAA program type.

Results

The results from the panel specifications of outlays provided in year t are presented in Table 2.4. The results indicate that there is a strong, negative relationship between CAA outlays provided in year t and both riot occurrence and severity. The treatment effect is statistically and economically significant, indicating that over the entire period, CAA outlays decreased the number of riots by 4-6% and the intensity of rioting by approximately 50%.

This is likely an underestimate of the aggregate impact of CAA outlays, as there may be an ongoing impact of previously spent outlays. The results from the second set of panel specifications in Table 2.5 account for these impacts. The results are again economically and statistically significant and the treatment effects are even larger. For a sense of scale, the results indicate that the total CAA outlays decreased the number of riots by roughly 15% and the severity of rioting by nearly 50%.

I present a similar analysis with outlays divided by expenditure type in Table 2.6. The most striking element amongst the results is the strong negative relationship between community organizing and riot severity given contemporary claims that organizing promoted rioting. The single largest negative treatment effect is legal outlays, which is consistent with rioting being driven by the failure of communities to provide proper redress in disputes with the police. Not surprisingly, employment programs were highly effective at discouraging rioting, although it is unclear if the cause is that people are unable to riot while working or that a better life discourages destructive activity.

The panel results are robust to including years post-1968, limiting counties to those with populations over 25,000, 50,000 and 100,000, and limiting counties to African American populations over 1,000 or 5,000. Although these results are robust, it remains possible that there may be an unobservable covariate that varies with the error term so, in the final empirical section I seek to address this concern.

2.4.3 Event Study Analysis: Does Riot Occurrence Change after a County Receives its First CAA?

To gather further evidence regarding the relationship between the Community Action Program, I employ an event study analysis in an effort to take advantage of the variable timing with which CAAs were first funded. This approach is attractive as if properly implemented it should deal with the endogeneity approach in the prior section.

Methodology

To determine whether the propensity to riot changed following the introduction of a CAA to a community, I employ an event study framework with robust controls based on the following specification:

$$R_{it} = \alpha_i + \gamma_{u(i)t} + \delta_{u(i)t} + \sum_{-3}^{-1} \pi_y D_i 1(t - T_i^* = y) + \sum_1^3 \tau_y D_i 1(t - T_i^* = y) + \varepsilon_{it} \quad (2.3)$$

Where R_{it} is the number of riots in county i in year t , α_i is a set of county fixed effects that accounts for time-invariant facts and constant unobservable factors, $\gamma_{u(j)t}$ is a set of urban status-by-year fixed effects, $\delta_{u(i)t}$ is a set of year or state-by-year fixed effects that captures national trends in funding, and ε_{it} is an error term. D_i is an indicator variable that is equal to one if a county ever receives a CAA and captures the treatment of having a CAA. The effect of having a CAA on rioting is captured with a series of event-year dummies $1(t - T_i^* = y)$, which are equal to 1 in the relevant event year.

Results

The results are presented in Tables 2.1 and 2.7. They indicate that a county was somewhat more likely to experience a riot prior to the initial funding of a CAA in a county and significantly less likely after the funding of the CAA. The scale of the treatment effect is quite large, decreasing the average number of riots in a year by between 58 and 450, depending on the estimate.

A. Dependent Variable: Number of Riots		
Year: -3	0.129*** [0.0374]	0.0610* [0.0351]
Year: -2	0.153*** [0.0228]	-0.0669*** [0.0217]
Year: -1	0.0620*** [0.0166]	0.0199 [0.0158]
Year: 1	-0.0633*** [0.0143]	-0.0332** [0.0137]
Year: 2	-0.0544*** [0.0160]	-0.0417*** [0.0153]
Year: 3	0.090*** [0.0147]	0.0207 [0.0141]
Obs	10718	10718
R^2	0.50	0.56
Covariates	C, S-Y	C, S-Y, U-Y

Table 2.1 Event Study Relationship Between a City’s First CAA Grant and Riot. Note: The models presented are least-squares estimates of equation 5 using event study year groupings. C represents county fixed effects; S-Y represents state by year fixed effects; U-Y represents urban by year fixed effects. More information is available in the note attached to Figure 5. Sources: Spilerman, 1971, Carter, 1986, NACAP, County and City Data Book

These results are robust to additional controls and a variety of specifications and are displayed visually in Figure 2.8. Importantly, although there is evidence that CAA funding responds to rioting, the timing of a county receiving its first CAA grant is unrelated to rioting in 1964 and 1965.³⁶ However, it is impossible to completely eliminate the pre-trend in this analysis, meaning that we cannot be certain of causation. In addition, these results are limited to the extensive margin of the treatment.

³⁶A companion paper is currently in progress that focuses entirely on whether the allocation of War on Poverty funding responded to rioting. Preliminary results from this analysis indicate that there is a meaningful increase in funding in response to both the occurrence and the relative severity of a riot.

2.4.4 Instrumental Variables Cross-Sectional Analysis

In the final stage of the empirical analysis, I return to the cross-section and implement an instrumental variables approach to achieve causal identification of the impact of CAA funding on riot occurrence and severity. This is necessary given the complications found in the prior three approaches.

Methodology

In order to accurately estimate the treatment effect of CAP outlays in the cross-section, I employ an instrumental variables strategy to isolate exogenous variation in the level of federal support for CAAs. I instrument for the level of CAP outlays with two instrumental variables: the change in the share of voters supporting the Democratic presidential candidate between 1960 and 1964 interacted with a measure of whether the 1960 presidential election in the state was close and a similar, weighted measure for Democratic senators and the number of close senate races in the state between 1960 and 1964.

These instruments are driven by the understanding that while primarily concentrated on alleviating poverty, Johnson's War on Poverty may have had a secondary political component as captured by Bailey and Duquette (2014). In particular, while the War on Poverty was designed to end poverty in America, it was also designed to shift the electoral balance in the United States (Brauer, 1982). If targeted funding increased the popularity of the Democratic Party they would choose to direct these funds to regions to that could be part of a broader, structural shift in Democratic support. This is consistent with findings from the political economy literature around pork barrel spending. For example, Levitt and Snyder (1997) find that federal government spending has a significant impact on the re-election prospects of incumbents. In addition, there is evidence (Hobolt and Klemmensen, 2005) that spending on welfare programs can significantly boost electoral turnout. As such, there is strong reason to believe that the Democratic Party may have distributed Community Action Program dollars to maximize its political gains. So where would the government choose to target these outlays? Since the 1964 vote was a landslide, regions of significant growth in Democratic vote share signaled opportunities for Democrats to gain long-term support. In order to help secure the votes of citizens in these newly Democratic regions, the Democrats may have chosen to disproportionately allocate Community Action Program spending to these regions. This would be make sense from a traditional "pork barrel politics" frame, but also from the perspective of CAAs being entities that engaged in political organizing.

Using these instruments, I perform a two-stage least squares analysis. The first step is to perform a regression of:

$$O_i = \delta_0 + \delta_1 P_i + \delta_2 S_i + \lambda X_i + v_i \quad (2.4)$$

Where O_i is the per capita value of CAA outlays designated county i , P_i is the change in the share of voters in county i supporting a Democratic presidential candidate interacted with whether a state was *close*, S_i is the change in the share of voters in county i supporting a Democratic senatorial candidate interacted with the number of *close* senate races, X_i is a vector of county specific covariates, and v_i is an error term. I calculate a predicted value for the level of outlays per capita, which I then employ in the second stage of the regression:

$$R_i = \alpha + \beta \hat{O}_i + \gamma X_i + e_i \quad (2.5)$$

Data

Aside from the information necessary to derive the instrumental variables, the data is otherwise identical to that from the previous cross-sectional work. The data used to construct the instrumental variables are drawn from the “General Election Data for the United States, 1950-1990” (ICPSR, 1984) dataset and the United States Congressional District Data Books (ICPSR, 1973).

I employ two measures generated from these data. The first instrument is the change in the share of voters in a county that voted Democrat in the presidential elections between 1960 and 1964 interacted with whether the state was a *close* race in the 1960 presidential election. A close race is defined to be a margin of less than 10 percentage points.

The second instrument is the change in the share of voters supporting a Democratic senator interacted with the total number of senate races in the state that were close in 1960, 1962, and 1964. As a result of the staggered senatorial election cycle, I generate the change in Democratic support as a weighted measure of the 1958-1960 period versus the 1964-1966 period.

Instrument Validity

There is little reason to doubt the instruments’ relevance, as the F-statistic against the null that the excluded instruments are irrelevant in the first stage is 12 or greater, indicating that the results are robust to a weak instruments criticism. This is unsurprising given the strong relationship between the change in presidential vote share and CAP funding found in Bailey and Duquette (2014).

Furthermore, the importance of the IV approach is supported by the Wu-Hausman test, which has a p-value of 0.0043, indicating that CAA outlays are not exogenous.

With respect to the validity of the instruments, there is a literature on riots and elections that suggests that one should worry about the exogeneity of the instruments and the external validity of the results. In particular, there are a number of studies³⁷ considering the relationship between violence and elections in India. These studies tend to show that elections themselves encourage rioting and other violence.³⁸ In theory, competing parties may have some control over their supporters, allowing them to instigate mob violence for political purposes, resulting in political polarization. It appears, however, that riots in developing nations are different phenomena than their American counterparts. Indian riots are generally “preplanned and well organized and are not instantaneous” (Vadlamannati, 2008), which is the opposite characterization of American riots (Sears and McConahay, 1973). Rather, the proximate cause of American riots is typically interaction with the police. Additionally, there is no evidence that the 1960s American riots were orchestrated by political parties while Brass (2003) shows that Indian riots are often driven directly by political parties. There is also a clear seasonality to American riots, which typically occur during the summer months. As such, they do not occur close to election dates. Empirical testing finds no evidence that the 1960s race riots are similarly driven by an electoral cycle.

There is no strong reason to believe that rioting would be related to Democratic efforts to expand their voting base other than through the potential for regional patronage. However, it is possible that regions with shifting political allegiances in the first half of the 1960s may have been coincidentally more or less likely to experience rioting as a result of other factors. Comparing counties above and below the average values of the instrumental variables reveal that, on average, they are similar. Counties that experienced an above average increase in support for Senate Democrats tended to be somewhat smaller, but with more African American and somewhat fewer immigrants. In order to correct for this, I include a robust set of controls surrounding population, ethnicity, and population density as detailed in the Appendix.³⁹

Over-identification tests for the instrumental variable specifications result in a p-value of between 0.3 to 0.4, indicating that we cannot reject the null hypothesis that the instruments are exogenous. To further test the exogeneity of the instruments, I run the first stage of the IV regressions with several outcomes other than government spending as the dependent variable. These outcomes include: city expenditures in 1964, city welfare spending in 1964, average rainfall, average temperature, form of municipal government, and infant mortality in 1950. In all of these

³⁷Gareth Nellis and Rosenzweig (2014), Chaturvedi and Mukherji (2005), and Wilkinson (2004) have all studied the relationship between rioting and elections.

³⁸A study by Vadlamannati (2008) considers the relationship between the timing of elections and the occurrence of riots over 16 Indian states from 1958-2004. Vadlamannati’s results indicate that scheduled elections are related to an increase in riots and that more riots occur as one approaches an election year and decreases after the elections, resulting in a cyclical riot pattern.

³⁹A complete comparison of counties above and below the mean of the instrumental variables is presented in the Appendix.

cases the instruments hold no explanatory power.

Results

The results from the instrumental variables regressions are presented in Table 2.2. They differ significantly from the basic cross-sectional analysis.

A. Dependent Variable: Number of Riots		
	First Stage	Second Stage
CAA Outlays		-0.68** [0.28]
Δ Dem. Pres. Vote Share 60 – 64	0.38* [0.20]	
Δ Dem. Sen. Vote Share 60 – 64	1.07*** [0.23]	
Observations	3069	3069
R^2	0.066	0.51
B. Dependent Variable: Severity of Riots		
	First Stage	Second Stage
CAA Outlays		-0.0042 [0.003]
Δ Dem. Pres. Vote Share 60 – 64	0.38* [0.20]	
Δ Dem. Sen. Vote Share 60 – 64	1.07*** [0.23]	
Observations	3069	3069
R^2	0.066	0.59
Covariates	D, R	D, R

Table 2.2 Elections Instrumental Variable: Does Funding Stop Rioting? (2SLS). Note: The models presented are two-stage least-squares estimates of equations 2 and 3. D represents a robust set of demographic controls, which are fully listed in the data appendix; R represents regional controls. If a two-step Tobit procedure is used for severity of riots regression, CAA outlays are found to be statistically significant with a coefficient of $-.09$ and a standard error of 0.05 . Sources: Spilerman, 1971, Carter, 1986, NACAP, County and City Data Book

The estimates indicate that CAP outlays significantly decreased rioting and, although the severity index is not statistically significant, it is on the verge of significance.⁴⁰ To get a sense of the magnitude of the treatment effect, a one standard deviation change in CAP outlays per person (\$78 per person) would decrease the number of riots in a city by 0.53 and the severity of rioting by 0.0042. In order to achieve a one standard deviation decline in the number of riots (1.386 riots), outlays per person would need to increase by \$204. A \$438 per person increase would be required to achieve a single standard deviation increase in riot severity (0.0184).⁴¹

⁴⁰However, when implementing the two-stage Tobit procedure, accounting for the lower bound at 0, CAA outlays are found to significantly decrease riot severity.

⁴¹These results are robust to a number of tests, including: removing counties with a population under 50,000, removing the largest city in each state, restricting outlays to those pre-1968 and riots post 1967, and controlling for industrial composition, city welfare spending, total city spending, the form of municipal government and rainfall. For example, dropping counties with a population under 50,000 in population still results in a statistically significant treatment effect with a standard deviation increase in outlays decreasing the number of riots in a city by 0.41. The results are also robust to alternative closeness thresholds between 10% and 1%. For example, with a 1% threshold the

2.5 Discussion and Conclusion

The results from the empirical analysis suggest that funding for the Community Action Program decreased both the occurrence and the severity of the 1960s race riots. The results vindicate Lyndon Johnson's use of the Community Action Program to deter the riots. Although the results do not allow us to rule out individual incidents in which CAA staff were involved in rioting, they allow us to reject any overarching narrative suggesting that the War on Poverty or the CAP was a driving force behind the race riots. Furthermore, the results suggest that the War on Poverty was not as ineffective as some commentators (Ginzberg and Solow, 1974) have suggested and add to a growing literature suggesting that the War on Poverty was, at the very least, a limited success (Almond et al., 2011; Bailey, 2012; Bailey and Danzinger, 2013; Hoynes and Schanzenbach, 2009; Ludwig and Miller, 2007).

It is important to consider the relative magnitude of this effect. The estimates suggest an approximate reduction in riot occurrence of 15 to 60 percent and reduction in severity of 45 to 54 percent. Given the billions of dollars spent in the War on Poverty, at first glance, this does not appear to be an overwhelming effect. However, the attempt to discourage the race riots was a secondary goal of the Community Action Program and funds were not allocated to programs in a manner that would have maximized riot reduction. This is particularly clear when considering the "cost" to prevent a riot in a particular city; for example, the results suggest that it would have taken a several-fold increase in the size of Detroit's CAP program to prevent the Detroit riots. However, this could nearly be achieved through the reallocation of existing spending to community organizing and legal support.

We may also draw conclusions about the impact of community action on the welfare of African Americans. Economists tend to use variables such as wealth, income, consumption or measures of happiness as proxies for human welfare. The occurrence of riots should make a suitable addition to this list of proxies for human welfare, as nearly all theories intended to explain the 1960s riots rest upon some form of displeasure or disenfranchisement in the African American community. As such, we may view the differential occurrence of riots as a cross-city measure of welfare. Thus, the causal negative relationship between CAA spending and riot occurrence indicates that the Community Action Program improved the quality of life for those living in poor African American communities.

It is of particular interest that, in the analysis by spending type, it is not the funds dedicated towards the provision of direct anti-poverty services that appear to make the largest difference. Rather, it is the spending on community organizing and legal support by CAAs that appear to have

treatment effect of outlays on rioting is -0.26**.

driven the decrease in rioting⁴². This result speaks to the internal debate that raged within the CAA movement regarding the relative importance of organizing and service provision and indicates that Shriver's push towards service-oriented CAAs may not have been the optimal policy to prevent rioting. While the results indicate that empowerment was the essential factor, it is difficult to be certain of the precise mechanism. For example, it is possible that the outlays provided for community organizing are proxying for the inclusiveness or democratic nature of the CAA. It seems likely that community organized CAAs, rather than institutionally supported CAAs, would be applying for these community organizing grants. In addition to being democratic, it is likely many of these same CAAs carried on the non-violent tradition of the civil rights movement, pushing for political equality with federal funds, which may have discouraged rioting as a valid form of protest (Andrews, 2001; Quadagno, 1994).⁴³ This view is supported by Sirianni and Friedland (1995) who argue that CAAs "appear to have often been captured by the civil rights movement and caught up in the dynamics of political struggle." If it was indeed the traditional leaders of the civil rights movement taking control this struggle would likely have been a non-violent one. Regardless, the results indicate that community empowerment was the active mechanism through which the CAP lessened rioting. This is a clear rejection of the argument that CAAs encouraged rioting through their anti-establishment organizing. Additionally, this finding supports those sociological theories in which communal violence is driven by disenfranchisement or frustration.

While riots are a relatively rare phenomenon in the United States, many nations, particularly developing ones, are faced by regular rioting and other forms of communal violence. Many papers have focused on the relationship between declining income and communal violence (Bohlken and Sergenti, 2010; Miguel, 2005; Muller, 2008); these results suggest that, while anti-poverty programs may be effective in discouraging this violence, it is important that attempts be made to empower the poor to make these programs as effective as possible.

To conclude, the analysis presented in this article shows that spending on the Community Action Program during the War on Poverty served to ease the rioting in the 1960s. In particular, there is no empirical support for claims that the Community Action Program served to encourage these riots. While there are certainly elements of the CAP that can be criticized, the CAPs discouragement of the race riots should be considered one of its great successes.

⁴²The success of employment services in decreasing riot severity is a significant outlier from this larger point.

⁴³However, there are accounts of "black militants" running some of community-controlled CAAs, which may have accessed community organizing funds (Flanagan, 1998).

2.6 Appendix

Number of Riots and Days of Rioting by Month, 1964-1971

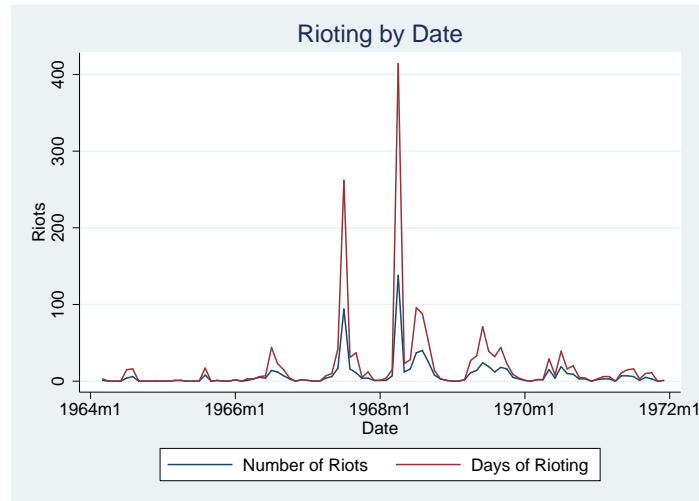


Figure 2.1 A riot is defined as a spontaneous event with at least 30 participants that resulted in some type of damage or violent behaviour. In addition, the data from Spilerman and Carter requires that some of the participants must be of African American origin. Many riots extended over several days, particularly during the major outbreaks of rioting in 1967 and 1968 Source: Spilerman, 1971 and Carter, 1986.

Riot Severity by Month, 1964-1971

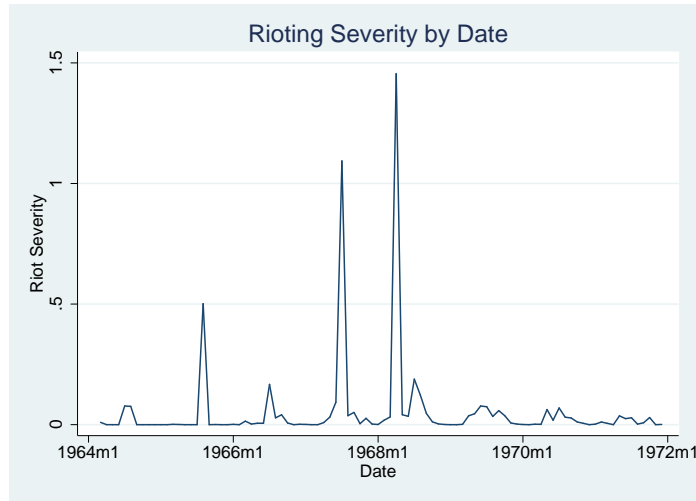


Figure 2.2 Riot severity is defined as the share of each of each riot characteristic that occurred in the time period, meaning that the total value sums to 5. The trends generally mirror the prior figure. Obvious points of difference include the outbreak of rioting in late 1965, which was particularly severe along with the surge of rioting in the spring of 1967. Source: Spilerman, 1971 and Carter, 1986.

Other Outcomes by Month, 1964-1971

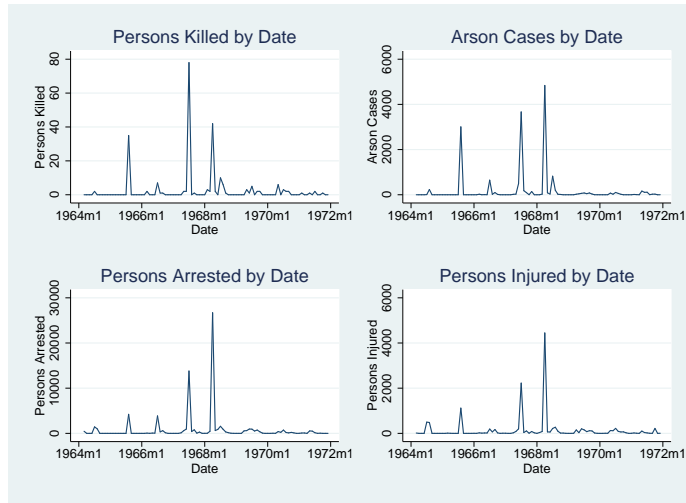


Figure 2.3 Individual rioting characteristics generally match the prior trends. While injuries and arrests closely mirror the number of riots graph, deaths and arson cases appear to drive the differences between riot occurrence and riot severity. Source: Spilerman, 1971 and Carter, 1986.

Number of Riots per City, 1964-1971

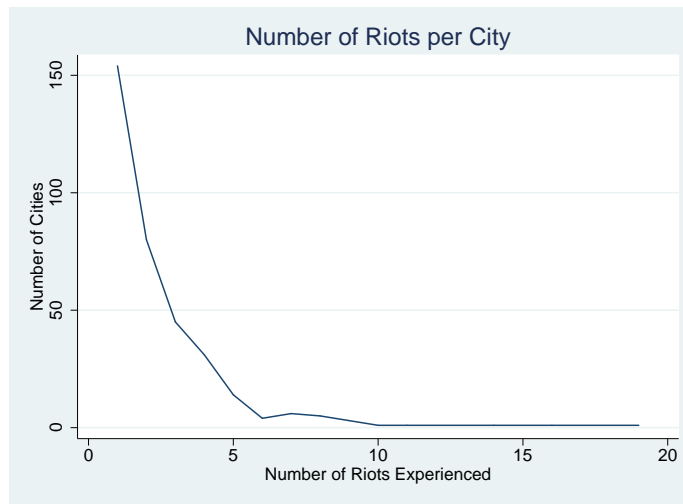


Figure 2.4 A riot is defined as in previous tables. Source: Spilerman, 1971 and Carter, 1986.

Indifference Curves for Impoverished and Well-off Communities in a Signaling Model

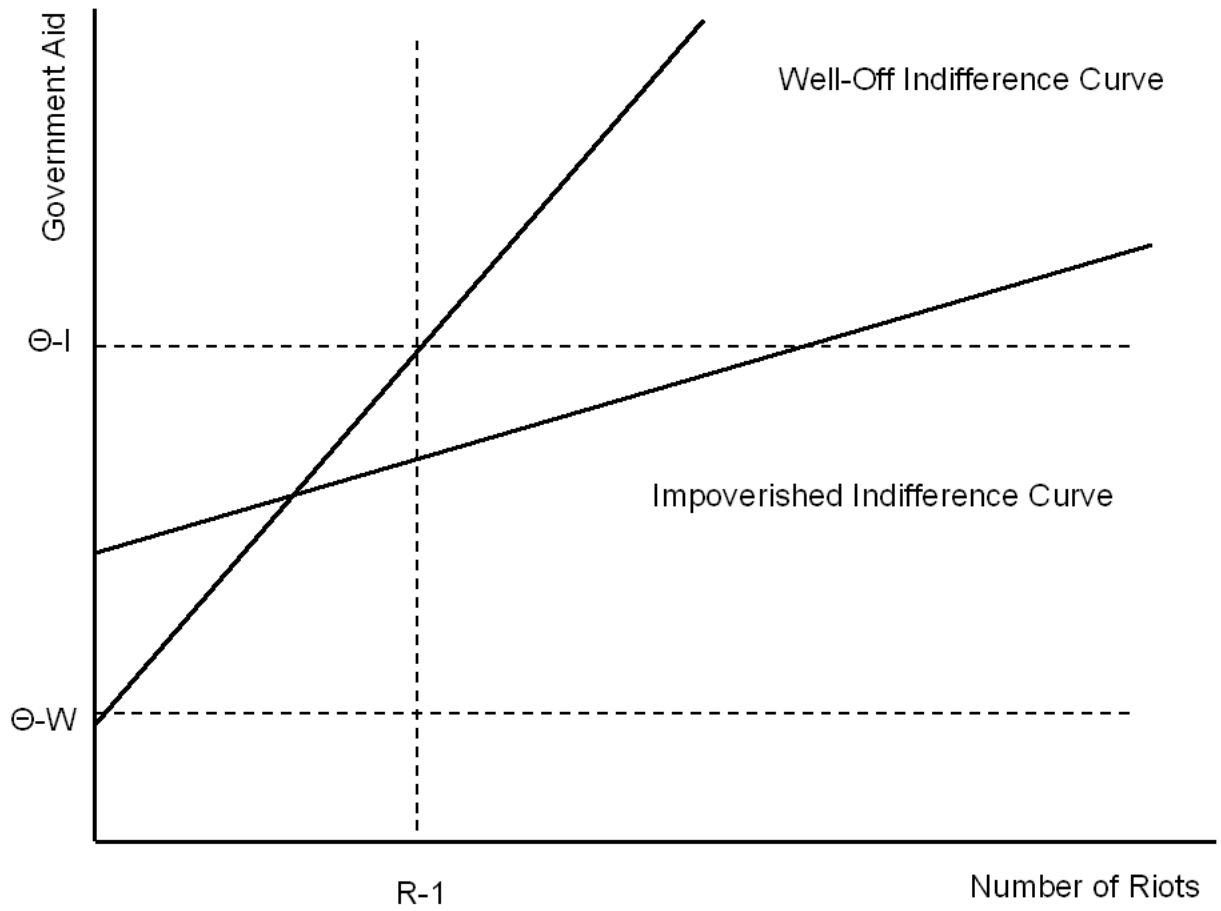


Figure 2.5 Indifference curves for impoverished and well-off communities in a signaling model.

Establishment of CAAs, 1965-1971

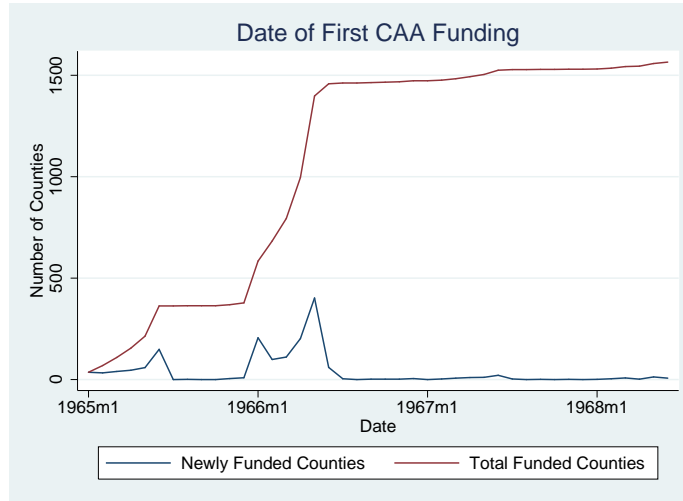


Figure 2.6 Dates are the first month that CAP funding was provided to a city. It is assumed that a CAA exists in a city once the first outlay to the city is recorded. The vast majority of counties receive their first funding allocation in 1966, although several hundred counties also received their first allocation in 1965. Source: NACAP.

Funding for CAAs, 1965-1971

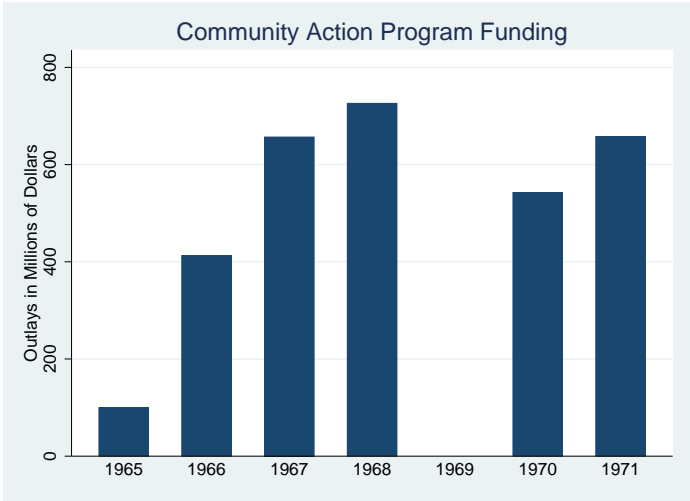


Figure 2.7 This figure displays told CAP outlays allocated to a county. They are assigned to years based on the signing date of the financial allocation. Unfortunately, the NACAP data are missing grants for 1969 so that year is excluded. Source: NACAP.

Rioting in Relation to a County's First CAA

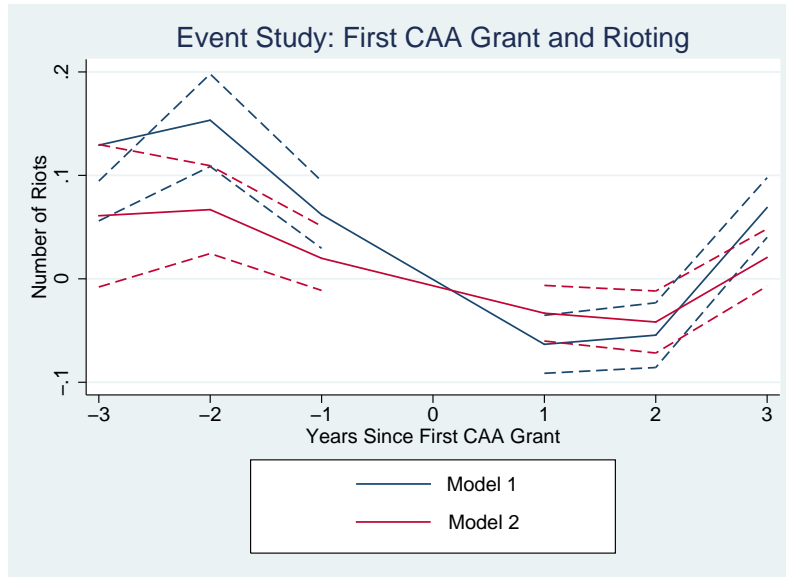


Figure 2.8 This figure visually displays the results from Table 6. Model 1 includes county, and state-year fixed effects. Model 2 includes county, state-year, and urban-year fixed effects. Robust standard errors are reported. Time 0 indicates funds that were provided in the actual year that a county first received CAA funding. Points to the left indicate the number of riots in the years prior to the funding of the CAA and points to the right indicate outlays provided in the years after the CAA was established. Sources: Spilerman, 1971, Carter, 1986 and NACAP.

Relationship Between CAP Outlays and Rioting (OLS)

A. Dependent Variable: Number of Riots				
CAA	0.00	0.018	0.080*	0.13***
	[0.054]	[0.052]	[0.042]	[0.038]
CAA Outlays	3.9	3.6	1.7	-6.6**
	[3.0]	[2.9]	[10.0]	[3.1]
Observations	3069	3069	3069	3069
R^2	0.64	0.64	0.48	0.73
Covariates	D	D, R	D	D, R
Time period	All	All	B-A	B-A
B. Dependent Variable: Severity of Riots				
CAA	-0.0018	-0.0014	-0.0019	-0.00040
	[0.0013]	[0.0012]	[0.0020]	[0.00079]
CAA Outlays	0.12	0.11	0.53	-0.045
	[0.091]	[0.088]	[0.53]	[0.055]
Observations	3069	3069	3069	3069
R^2	0.47	0.47	0.33	0.33
Covariates	D	D, R	D	D, R
Time period	All	All	B-A	B-A

Table 2.3 The models presented are least-squares estimates of equation 1. The primary independent variables are CAA outlays per capita provided to a county in the current year and whether a county has a funded CAA. D represents a robust set of demographic controls, which are fully listed in the data appendix; R represents regional controls. The “All” time period spans all CAA funding and riots between 1964 and 1971; the “B-A” time period includes outlays prior to 1967 and riots post 1967. Sources: Spilerman, 1971, Carter, 1986, NACAP, County and City Data Book.

Relationship Between Year-of CAP Outlays and Rioting (Panel OLS)

A. Dependent Variable: Number of Riots			
CAA Outlays	-1.98*** [0.515]	-1.80*** [0.508]	-1.15** [0.509]
Obs	15935	15935	15935
R ²	0.65	0.66	0.68
Covariates	C, Y-ST, Y-U, D-T	C, Y-ST, Y-U, D-T, P-R	C, Y-ST, Y-U, D-T, P-R, E-T
B. Dependent Variable: Severity of Riots			
CAA Outlays	-0.276*** [0.0145]	-0.279*** [0.0145]	-0.286*** [0.0148]
Obs	15935	15935	15935
R ²	0.43	0.43	0.43
Covariates	C, Y-ST, Y-U, D-T	C, Y-ST, Y-U, D-T, P-R	C, Y-ST, Y-U, D-T, P-R, E-T

Table 2.4 The models presented are least-squares estimates of equation 6. The primary independent variable is total value of outlays (in millions of dollars) provided to a county in the current year. C represents county fixed effects; S-Y represents state by year fixed effects; U-Y represents urban by year fixed effects; D-T represents basic demographics interacted with a time trend; P-R represents controls related to the occurrence of past rioting; E-T represents expanded demographics interacted with a time trend. Sources: Spilerman, 1971, Carter, 1986, NACAP, County and City Data Book.

Relationship Between Cumulative CAP Outlays and Rioting (Panel OLS)

A. Dependent Variable: Number of Riots			
CAA Outlays	-2.76*** [0.215]	-2.80*** [0.214]	-2.62** [0.219]
Obs	15935	15935	15935
R^2	0.66	0.67	0.68
Covariates	C, Y-ST, Y-U, D-T	C, Y-ST, Y-U, D-T, P-R	C, Y-ST, Y-U, D-T, P-R, E-T
B. Dependent Variable: Severity of Riots			
CAA Outlays	-0.117*** [0.0061]	-0.113*** [0.0061]	-0.119*** [0.0064]
Obs	15935	15935	15935
R^2	0.43	0.43	0.43
Covariates	C, Y-ST, Y-U, D-T	C, Y-ST, Y-U, D-T, P-R	C, Y-ST, Y-U, D-T, P-R, E-T

Table 2.5 The models presented are least-squares estimates of equation 7. The primary independent variable is total value of outlays (in millions of dollars) provided to a county in all years prior to the current year. C represents county fixed effects; S-Y represents state by year fixed effects; U-Y represents urban by year fixed effects; D-T represents basic demographics interacted with a time trend; P-R represents controls related to the occurrence of past rioting; E-T represents expanded demographics interacted with a time trend. Sources: Spilerman, 1971, Carter, 1986, NACAP, County and City Data Book.

Relationship Between Types of CAP Outlays and Riot Severity

Dependent Variable: Severity of Riots		
Health Outlays	2.29*** [0.301]	0.684** [0.243]
CAA. Admin Outlays	0.462*** [0.00112]	-0.178** [0.000774]
Youth Outlays	1.9*** [0.229]	1.77*** [0.1881]
Legal Outlays	-5.52*** [0.203]	-2.46*** [0.164]
Comm. Org. Outlays	-1.01*** [0.085]	-0.286*** [0.0536]
Child Care Outlays	0.917*** [0.867]	0.478*** [0.0710]
Employment Outlays	-1.68*** [0.147]	-1.38*** [0.0818]
Obs	15935	15935
R^2	0.46	0.49
Outlays	Year-of	Cumulative
Covariates	C, Y-ST, Y-U, P-R	C, Y-ST, Y-U, P-R

Table 2.6 The models presented are least-squares estimates of equations 7 and 8. The primary independent variables are the total value of outlays (in millions of dollars) assigned to different program types and provided to a county. C represents county fixed effects; S-Y represents state by year fixed effects; U-Y represents urban by year fixed effects; D-T represents basic demographics interacted with a time trend; P-R represents controls related to the occurrence of past rioting; E-T represents expanded demographics interacted with a time trend. Sources: Spilerman, 1971, Carter, 1986, NACAP, County and City Data Book.

Event Study: Relationship Between a City's First CAA Grant and Riot Occurrence

A. Dependent Variable: Number of Riots		
Pre-riot	0.107***	0.0452***
	[0.0182]	[0.177]
Post-riot	-0.415**	-0.0210
	[0.0181]	[0.0172]
Obs	10718	10718
R^2	0.49	0.56
Covariates	C, S-Y	C, S-Y, U-Y

Table 2.7 The models presented are least-squares estimates of equation 5 using event study year groupings. C represents county fixed effects; S-Y represents state by year fixed effects; U-Y represents urban by year fixed effects. More information is available in the note attached to Figure 5. Sources: Spilerman, 1971, Carter, 1986, NACAP, County and City Data Book.

Characteristics of Cities Receiving CAAs, 1964-1971

	CAA Established in				Estimation Sample	
	1965 (N=373)	1966 (N=1089)	1967 (N=56)	1968 (N=34)	CAA (N=1522)	No CAA (N=1635)
Mean 1960 Population (thousands)	232.4	52.2	35.6	26.9	94.4	20.0
Mean 1960 Population in Poverty (thousands)	29.6	8.3	7.1	6.7	13.4	3.9
Percentage of 1960 Population						
African American	8.8	10.9	10.7	17.6	10.5	8.7
Foreign Born	3.6	2.0	1.8	1.1	2.4	1.7
In Poverty	14.2	17.5	16.2	24.0	16.8	17.3
Income below \$3000	26.9	35.4	33.2	43.0	33.5	35.6
Unemployed	5.8	5.5	5.2	5.8	5.6	4.7
Median						
Income (thousands)	5.0	4.2	4.3	3.6	4.4	3.8
African American Income (thousands)	4.4	3.1	2.6	2.1	3.4	1.5
Percentage African American Population Change	18.3	6.3	19.0	1.4	8.9	2.1

Table 2.8 This table includes unweighted summary statistics for a total of 3157 counties. Sources: NACAP and County and City Data Book. The complete list of socioeconomic control variables is as follows: population in 1960, percentage of population in an urban centre in 1960, percentage of the population that was African American in 1960, percentage of the population that was foreign born in 1960, median age in 1960, median years of schooling in 1960, percentage of civilian workers unemployed in 1960, percentage of workers using public transit in 1960, percentage of families making less than \$3000 in 1960, median family income of whites in 1969, median family income of African Americans in 1969, percentage of families in poverty in 1969, number of citizens on public assistance in 1964, and percentage of African Americans who owned their own home in 1970.

Characteristics of Cities by Riot Occurrence, 1964-1971

	At Least One Riot (N=241)	No Riots (N=2904)
Mean 1960 Population (thousands)	412.4	29.7
Mean 1960 Population in Poverty (thousands)	40.3	85.2
Percentage of 1960 Population		
African American	16.6	9.0
Foreign Born	4.0	1.8
In Poverty	11.7	17.5
Income below \$3000	22.5	35.7
Unemployed	5.1	5.2
Median		
Income (thousands)	5.5	3.9
African American Income (thousands)	6.3	2.1
Percentage African American Population Change	29.9	3.1

Table 2.9 This table includes unweighted summary statistics for a total of 3157 counties. Sources: NACAP and County and City Data Book.

Summary of Major Riots

Year	Month	City	Arrests	Injured	Killed	Days	Severity	Trigger
1965	August	Los Angeles	3952	1032	34	7	4.9	Started with an arrest for impaired driving
1967	July	Detroit	7231	491	43	9	4.9	Started with a police raid on a blind pig
1968	April	Washington	7772	1158	11	9	4.6	Grew out of a march led by Stokely Carmichael after the death of Dr Martin Luther King Jr (Zeman, 2011)
1967	July	Newark	1443	1108	24	6	4.1	Started after the police were seen taking an incapacitated cab driver into a precinct, leading to a rumor that he had been killed (Parks, 2007)
1968	April	Baltimore	5682	900	6	6	3.8	Broke out of 2 days of mild unrest after the death of Dr King
1968	April	Chicago	3026	501	9	7	3.8	Rioting broke out on the West side of Chicago after the assassination of Dr King. Investigations failed to determine a particular cause beyond pent-up aggressions (Chicago Riot Study Committee, 1968)
1967	July	Milwaukee	1183	100	4	10	3.3	Started with the police intervening in a fight at the St. Francis Community Centre (Unknown, 2007)
1966	July	Cleveland	3253	60	4	5	3.3	Started when police arrived to control protests outside of an openly discriminatory bar (Michney, 2006)

Table 2.10 This table summarizes the most damaging of the 1960s race riots, as measured by the factor severity index developed by (Collins and Margo, 2007). Sources: Spilerman, 1971 and Carter, 1986.

Chapter 3

War Contracts and Break Points: The Economic Geography of American Trade Unions

3.1 Introduction

The study of the trade union movement has found new life over the last decade with the introduction of causal methodology. In that time, economists have developed a thorough understanding of the impact of unions on wages and firm performance,¹ inequality,² poverty,³ unemployment and a host of other outcomes. However, economists and other social scientists have been slow to apply contemporary methodology to the study of union membership and its spatial distribution.⁴ And while there have been attempts to analyze the spatial growth of union membership in other disciplines, there are clear advantages to bringing both the insights and the empirical rigour of economics to the topic.⁵

The goal of this paper is to develop an *economic* understanding of the basic spatial processes that underlay the American labour movement. To this end, I look to the field of economic geography for guidance. In particular, this paper treats the city growth and disaster response literature⁶ as a template for conducting this analysis both with respect to the possible growth processes and obtaining causation in the analysis. As urban economists have attempted to explain “the distribution of economic activity across space”(Davis and Weinstein, 2001) by searching for

¹Recent examples include Lee and Mas (2012,) and DiNardo and Lee (2004).

²For examples, refer to the work of Card et al. (2004) and Taschereau-Dumouchel (2012).

³Brady et al. (2013) find that state-level unionization is a key determinant of working poverty levels in the United States

⁴There are only a handful of notable exceptions to this observation in the last 20 years. These include Freeman (1998), Palley and LaJeunesse (2007), and Holmes (2006).

⁵This is not to undermine the importance and substantial work performed by dozens of economic geographers studying the spatiality of labour. I provide a thorough review of the relevant literature produced by economic geographers later in the paper.

⁶A particular intellectual debt is owed to both Vigdor (2009) and Davis and Weinstein (2001).

regional persistence and spillover effects; I search for the effects that may govern the distribution of union membership.

The three principal approaches for explaining the spatial distribution of economic activity as identified by Davis and Weinstein (2001) can be re-purposed to apply to the spatial distribution of union membership: increasing returns, locational fundamentals, and random growth. Union density could be governed by regional increasing returns for a variety of reasons: decreasing costs for organizing drives,⁷ increasing costs for employers that fight union drives,⁸ and decreasing costs of unionization to employers.⁹ There could also be some form of political lock-in mechanism that would result in increasing returns.¹⁰ The locational fundamentals hypothesis most closely mirrors the conventional wisdom regarding the growth of unions. Union growth that is a result of the presence of certain industries, cultural beliefs, or exogenous institutions all fall within this umbrella. The random growth hypothesis suggests that the distribution of union membership develops according to a basic stochastic process. The key question from a public policy perspective is: how important increasing returns to scale have been for the labour movement? Given the significant contraction of the US labour movement over the last 50 years, this question is fundamental to whether labour has the ability to halt this decline.

This paper examines these growth dynamics using state-level union membership or imputed membership dating back to the late 1930s and a quasi-natural experiment that occurred during World War II.

First, I assemble dataset of all available state-level union membership figures running back to the 1930s¹¹ and search for patterns in the data. This exercise reveals that, in recent decades, the labour movement has become concentrated in fewer and fewer states, which is indicative of an increasing returns phenomenon. These data point to the fact that the labour movement underwent a significant spatial reorganization or “break point” during World War II¹² that can be exploited for causal analysis.

Second, I exploit the break point during World War II as a quasi-natural experiment to causally determine the role of increasing returns in unions’ spatial growth. In particular, I take advantage of

⁷For example, this may include: knowledge spillovers, the presence of local volunteers to organize and support job actions, and local union infrastructure.

⁸Costs on the employer side include: picket lines that are better respected by suppliers, regional product boycotts, and political pressure.

⁹If local wages are already increased through threat affects or wage matching within the industry (Freeman, 1986) there may be little disadvantage to allowing the union to enter the workplace.

¹⁰The primary example here would be the exceptional degree of control that the United Auto Workers have held over the Democratic Party in the state of Michigan.

¹¹This dataset can be extended back as far as the 1870s. However, in such a case it will contain many data gaps in the late nineteenth and early twentieth centuries.

¹²Prior spatial reorganizations likely occurred with the collapse of the Knights of Labor after the Haymarket Massacre and during World War I.

the World War II era labour-government compact, which made employer-resistance to union drives difficult in key war industries. The compact was broadly ignored, although it was almost uniformly complied with in “essential” wartime industries: firms that refused to obey directive orders from the NLRB, particularly in the case of union recognition and security, were seized by the military (Teller, 1947). This institutional feature suggests that regions that included a large number of important war industries in the early 1940s should have witnessed significantly lower organizing costs for the AFL and the CIO, resulting in an increase in organizing, and thus, union density. The compact is an ideal quasi-experiment, as it only lasted for a handful of years, was associated with the largest expansion in union organizing in American history, and can be differentiated by region using information on the assignment of war contracts. Using war contracts as an instrumental variable, the results from this quasi-experiment show that increasing returns play an important role in the growth of unions, as unions that experienced this exogenous boost to membership during World War II have seen the greatest private and public sector union membership growth since.

Third, I attempt to isolate the causes of the increasing returns phenomenon. I employ data from the AFL-CIO FAST Database, covering all union organizing drives from 1960 until the early 2000s, to determine whether more organizing occurs in regions with high union density. The results indicate that the vast majority of union organizing has occurred in regions that experienced the greatest union growth during World War II. Using this same dataset, I also find that firms are much less resistant to existing unions and organizing drives in high-density regions, as measured by the number of unfair labour practice filings. While right-to-work legislation appears to play some role in the increasing returns phenomenon, other types of state-level labor regulations do not appear to play an important role. These mechanisms clarify how the increasing returns phenomenon identified previously operates. Furthermore, it clarifies that some of the key locational fundamentals such as “right-to-work” legislation and employer culture are in fact endogenous to membership.

The results indicate that the growth of the American labour movement is subject to a powerful increasing returns phenomenon. This is an important development in our understanding of the processes governing union growth and is a break with the conventional wisdom that culture, legal institutions, and firm features explain union membership. The presence of increasing returns suggests that union density isn’t just a matter of exogenous worker preferences. Rather historical shocks, potentially caused by brief institutional changes, can have long-lasting effects.

This feature appears to be driven by an equilibrium situation in which unions target their organizing resources in high-density regions while employers limit their resistance to organizing drives in these same regions. This has meant that, over time, America’s remaining union members have become concentrated in ever fewer regions as the movement continues to contract. This phenomenon crosses the private-public divide and explains why public sector unions appeared and have thrived in the private sector union strongholds that arose during and after World War II. These

results should be particularly worrying for the labour movement as they suggest that one-time legislative moves to cripple the labour movement in states such as Wisconsin, Indiana, and Michigan may result in an irreversible decline in union membership in those states.

3.2 The Literature: Regional Determinants of Union Membership

Prior to entering into the empirical analysis, it is worthwhile to consider the current state of the literature on the growth patterns of trade unions. This is not a simple task as the study of union membership is fractured across many academic fields, which pursue their studies largely independently. Below I summarize a representative, cross-section of this literature to give readers a sense of what various disciplines have determined regarding the spatial distribution of union membership.

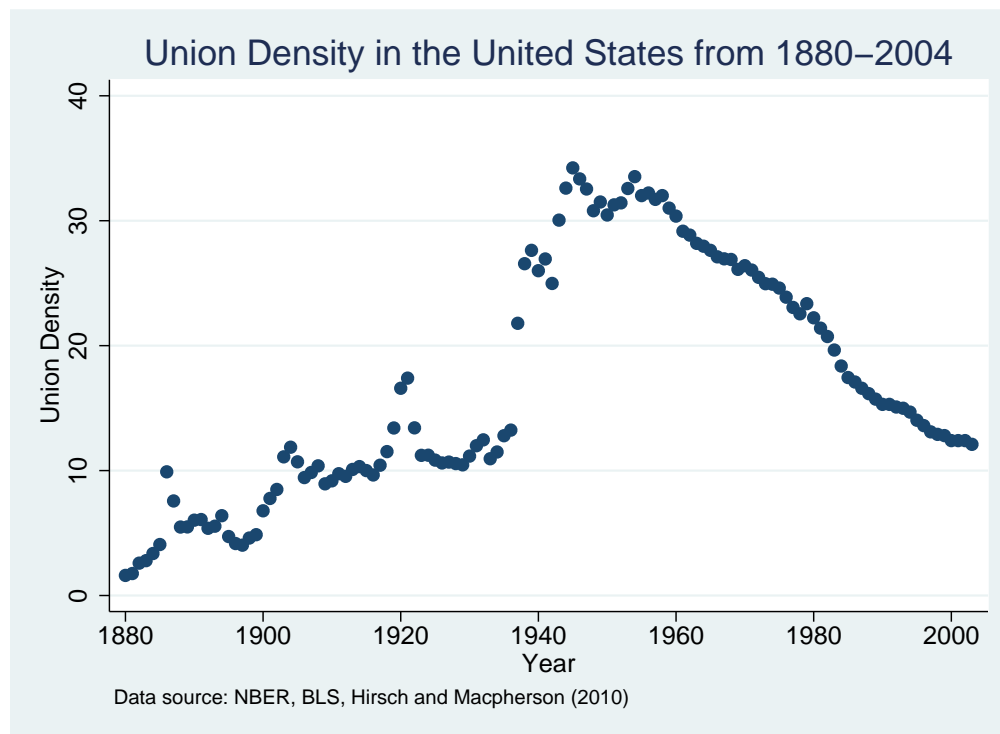


Figure 3.1 Figures generated as outlined in the Data Appendix from Source: Gallup (1937, 1939, 1945), Troy (1957), Garlock (2009), and Hirsch and Macpherson (2010).

There are a range of studies by economists and sociologists that paint a fairly similar picture of the determinants of union density. Koeller (1994) tests various potential determinants of union activity at the state level from 1958 to 1982. Although he finds that organizing, management opposition, and public policy all matter, structural changes in the labour force such as age, gender,

and occupation have had the most significant impact on changing patterns of membership. Koeller interprets these structural measures as proxies for broader structural changes in the economy. This finding is consistent with previous work by Moore and Newman (1988). Hirsch and Berger (1984) similarly find that firm and structural factors are primarily driving changes in union density. In particular, they identify market concentration, capital intensity, the scale of production, and job risk as key determinants of union membership. In a more recent study, Hirsch (2012) examines economic dynamism and its role in changing union membership patterns. He points to the relatively poor performance of union firms as driving the decline in density. This decline is concentrated in manufacturing, construction, transportation, communications and utilities and is consistent with previous papers. An interesting counterpoint to the fairly one-sided structural literature, Riddell (1993) finds that density grew in similar patterns in Canada in the US until the mid 1950s at which point a divergence occurred. Rather than pointing to structural factors for this divergence, Riddell finds that the strongest factors discouraging membership in the US are a combination of employer opposition and the legal framework.

There is also ample evidence that union-side, organizing decisions matter. Stepan-Norris and Southworth (2010) find evidence that increasing unfair labour practices have discouraged union organizing. Importantly, they also point to the important role of competition amongst unions in driving union density. Farber and Western (2002) look at the nearly 50% decline in organizing activity in the United States during the 1980s. This is one of the pivotal changes in US labour strategy that appears to have hastened the movements' sharp decline. Farber and Western find that the collapse is not attributable to the PATCO dispute, but rather appears to be aligned with the election of President Reagan and, hence, the shift in the political balance in Washington. This is suggestive of the possibility that changes in labour institutions drove the decline in union organizing. Finally, Weiler (1957) and Lalonde and Meltzer (1991) find that the success rate of unions in certification elections has declined significantly through the post-war period, which explains a large share of the decline in organizing drives. However, they are unable to answer why this ratio has changed over time. Using data from Canada, Johnson (2002) confirms that union decline has been driven by a combination of structural factors and declining certification drives.

We can also draw insights from the existing literature in economic history. Rees (1962) and Huberman and Young (2002) both discuss the role that the rise of the CIO played in union growth in the lead-up to and during World War II. A change in tactics and institutional support during this era led to unions outlasting firms in disputes and gaining more members. This institutional change during World War II was a marked shift from the American norm discussed by Friedman (2000) in which US unions were generally forced to avoid state intervention.¹³ During this period, US unions added an additional 6 million workers in 24,000 certification elections. However, this growth

¹³World War I is the other major example in which US unions actively benefited from US state intervention.

was halted in the post-war strike wave and the failure of Operation Dixie (Griffith, 1988). This is consistent with work by Shorter and Tilly (1974), Friedman (1999), and Zolberg (1972) showing that unions grow faster in strike years. Rosenbloom (1998) studies the use of strikebreakers in the late 19th century, finding that their use is not correlated with the business cycle and are generally used in small, isolated cities and regions outside of the northeast.

Only a handful of papers have explicitly considered the importance of the spatial factors for union membership. Martin et al. (1993), three geographers studying post-1970 Britain, find that the British labour movement has been particularly resilient in its traditional heartland. Rather than pointing to an increasing returns phenomenon, the authors point to a failure to organize in new growth sectors and the importance of local labour and employer culture.¹⁴ While they don't use the language of economics to identify the increasing returns phenomenon, this paper could certainly be viewed as its qualitative predecessor. Wills (1996) considers the spatial dimension of trade unionism in the banking sector, finding that, in a number of case studies, banks are more likely to be organized and militant in labour's heartland. In recent years, Wills has extended this point to argue that community trade unionism will help expand labour's reach beyond its heartland (Wills, 2002). While the spatial dimension of trade union growth has largely been the domain of geographers, there has been limited work by economists. Holmes (2006) is the most important economic work highlighting the spatial dimension of union membership, finding that there is a strong relationship between organized coal mines and steel mills in the 1950s and organized hospitals in the present. Holmes' result is framed as a "spillover" effect and is strong, indirect evidence in favour of an increasing returns hypothesis.

Synthesizing the existing literature, there appears to be a consensus on a handful of the key determinants to union membership. In particular, there is broad agreement that structural factors, particularly industrial composition have been the primary drivers behind changes in union density over time, while organizing drives and employer resistance appear to also play an important role. In addition, although there is limited hard evidence, the work of Holmes (2006) and Martin et al. (1993) are highly suggestive of an increasing regional returns phenomenon. Given these factors, when conducting the empirical analysis in this papers, controls include a robust set of industrial variables while organizing and employer resistance are each studied individually.

¹⁴This point is made in greater detail in their 2002 book.

3.3 Analysis of State-level Union Membership Data

I begin the empirical analysis by examining the publicly available data on union membership with spatial variation running back to the 1930s.¹⁵ From this data, we can answer a few basic questions. How persistent has union membership been in heavily organized regions? What has state-level variation in membership looked like over time? Are there distinct points of time at which union membership have undergone a significant spatial rearrangement?

I generate various measures of spatial variation and persistence over time that provide insight to the aforementioned questions.¹⁶ A summary of these measures is presented in Table 3.7. The data reflect well-known long-term trends, the peaking of labour membership shortly after World War II and the secular decline in membership and density since the end of war. This decline in membership drives a significant decline in the variation of both membership and density from 1953 until the 1980s.

In general, union density and membership are both highly persistent. However, there is a single break point in the spatial arrangement of union membership. There is a very large jump in the level of persistence between 1939 and the post-war years, indicating that there may have been a large, differentially applied shock that impacted union membership during the massive growth spurt during World War II.

After the break point during World War II, the movement has undergone a continual decline with high levels of regional persistence and decreasing variance as a result of a smaller labour movement. When controlling for the aggregate size of the labour movement by looking at the share of total union workers found in each state, the level of variation has started to increase over the last 20 years, which points towards a labour movement that is continuing to maintain its position in a handful of relatively well organized states while declining elsewhere. Thus, there is some evidence of increasing returns at present, while the relatively high level of persistence between today and 1886 is indicative of the importance of locational fundamentals.

3.4 Quasi-experimental Analysis: War Contracts and Break Points

The data analysis points to a few clear facts. First, union density is highly persistent. Second, while the variance of union density has declined over time, the variance in the share of total union

¹⁵Using a combination of existing studies, contemporary data sources, and historical surveys, I am able to assemble a state-level panel of American union membership running back as far as 140 years. The construction of this dataset is described in depth in the Data Appendix.

¹⁶The construction of these measures is described in detail in the Data Appendix.

membership in a state has increased in recent decades. Third, there is both an increase in the variance of union density and a sharp drop in the persistence rate between 1939 and 1953. These facts point to the likelihood that the growth of unions is subject to regional increasing returns to scale; however, the importance and scale of this effect is unclear.¹⁷

Thus, in order to gain a greater understanding of this potential phenomenon, it is necessary to locate a meaningfully large, exogenous shock that either drastically decreased or increased union membership differentially across states. With such a shock it is then possible to test whether a one-time shock has a long-lasting effect or whether the union membership in the region would revert to its prior status. Thankfully, the prior analysis points in the direction of a quasi-natural experiment. The increase in variance and drastic decline in persistence between 1939 and 1953¹⁸ suggests that a “break point” in union membership occurred over these years.

This break suggests that there likely exists some institutional or policy change over the course of World War II that resulted in a spatially differentiated rate of growth of the labour movement during World War II. Ideally, this feature would be exogenous while controlling for observables such that it could be used in an instrumental variables analysis to provide causal estimates of the impact of union growth during World War II on the rate of regional union growth after the war.

3.4.1 Quasi-experimental Analysis: Identifying the Exogenous Shock

This feature is readily identifiable upon a review of labor and industrial histories of World War II. It is well known that the the government played a large and escalating role in manpower activities (Baron et al., 1984), which included mediation between unions and employers.

In the late 1930s as war appeared ever more likely in Europe, the Roosevelt administration created a series of government boards comprised of representatives from industry, unions, and the public, which would serve to resolve industrial disputes with a particular emphasis placed on industries that were essential to the war effort. In order of existence (these boards did not overlap; each may be viewed as a continuation of their predecessors) these boards were: the National Defense Advisory Committee (NDAC), the National Defense Mediation Board (NDMB), and the National War Labor Board (NWLB).¹⁹ As the war progressed, the government viewed disruptions in the

¹⁷Although variance was largely stagnant in the 1970s and 1980s it does not mean that increasing returns were not at work, as it is possible that there were changes in locational fundamentals in that time period such as industrial composition that masked the effect.

¹⁸This same gap appears when instead using estimates derived from Gallup Polling for 1939 and 1945. However, 1953 is preferable as it is computed using the same data source as the 1939 figure.

¹⁹Some historians have downplayed labor’s role in these boards, but the NDAC did enact a series of labor principles governing the War Department and the NDMB itself collapsed when the CIO representatives resigned from the board. While Roosevelt was responsible for the first significant legal protections for unions, his policy during the war period would be best described as anti-work stoppage rather than pro-labor (Cornford. and Miller, 1995).

production of military products as ever more unacceptable it took greater and greater efforts to discourage strikes and lockouts (Cornford. and Miller, 1995).

This effort to discourage work-stoppages was primarily enforced through an informal compact between the government and the leaders of the AFL and CIO under which the unions agreed to not strike in exchange for government protection in organizing campaigns, particularly campaigns to secure the union shop.²⁰ However, this compact was far from harmonious. The two-parties frequently disagreed on wage rates and while the leaders of the labour movement offered no-strike pledges they were unable to control wildcat strikes by disgruntled and radicalized workers.²¹

The War Department itself was careful to never strictly side with unions or employers, but because they were responsible for dolling out defense contracts, they played an active role in setting the government's labour policy. The debate over whether the War Department should withdraw contracts from companies in violation of the Wagner Act began in late 1940 and continued throughout the war. This debate was initially set off when the NDAC declared a set of labor principles that the War Department adopted as a guide for issuing labor contracts. These principles required that defense contracts comply with federal, state, and local laws regarding labor relations, wages, hours, workman's compensation, safety and other conditions for employment. This was a policy that the War Department consistently altered; they would deny bids to employers based on their labour history, but could also approve violators of the Wagner Act. Procurement Circular 43 took this policy further and, in theory, required compliance with federal labor law in every invitation for bids. This led directly to rejection of bids from habitual violators such as Ford and Bethlehem Steel. Perhaps the most important example of this policy in action was the denial of a \$100 million contract to the Ford Motor Company. This decision was essential in securing the eventual settlement between Ford and the United Auto Workers. However, after a year the circular was dropped, allowing the War Department to make special exceptions.

Labour did not rely entirely on the government to protect their rights and unions would actively conduct strikes for recognition. Typically, when an employer fought a union drive in an industry important to the mobilization effort the union would file a complaint with the National War Labor Board and the representatives of the public would typically back the representatives from labour regarding a refusal to bargain from the employer and attempts to win the union shop. In some cases, the ruling of the labor board was sufficient for the employer to grant the union shop or negotiate with the union, however the board was limited in the tools at its disposal to enforce these rulings if either the firm or the union failed to comply. In particular, the NWLB had a single primary tool at its disposal, referring individual cases to the President who could sign an executive order, which would

²⁰The union shop being a firm or division of a firm in which all workers are members of the union.

²¹In general the compact stymied many of labours' demands regarding compensation, but facilitated its growth in membership.

enable the government, typically using a branch of the armed forces, to seize control of a company. The government would then encourage the board of directors to replace the senior management or, in the case of privately held companies, employ another firm to manage the violating company. This new management was typically selected conditional on their willingness to comply with the ruling of the NWLB.²²

Since the NWLB was essentially given a “nuclear” option for enforcement without a lesser mechanism, it was reluctant to actually employ this tool. In general, this option was primarily applied to firms that were important to the war effort rather than firms at large. As such, the NWLB granted significantly more protections to workers attempting to form a union or bargain with their employer in key war industries than they did in other types of manufacturing. It is easy to flag these industries in historical records as the War Manpower Commission (WMC) regularly published a list of “essential activities” (U.S. War Manpower Commission, 1942) with the first list having been developed in late 1942 (Mitchell, 2005). According to Kersten (2000), organizations such as the Fair Employment Practices Commission would employ this list of essential war industries as a guide, but could expand the list for their usage. For the purposes of identifying these industries in this paper, I make use of the List and Index of Essential Activities published by the WMC in 1942.

This policy of providing greater protection to organizing drives and efforts to introduce the union shop in essential war industries clearly suggests that an instrumental variables strategy that can be used to determine the causal impact of a one-time shock in union membership on future union growth. In particular, while controlling for regional demographics and industrial composition, I instrument for the growth rate of unions during the 1939-1953 period using the share of firms in the region that were essential to the war effort, as defined by the War Manpower Commission,²³ and the value of war contracts provided to firms in the region. The second instrumental variable, is attractive as it does not rely upon claims as to a definition of essential work, but rather weights importance with a dollar value.

This analysis could be problematic if the one-time exogenous shock was not in fact temporary. Fortunately, it is clear that this government intervention in labor relations beyond the NLRB did not meaningfully survive World War II. The National War Labor Board ceased operations in 1946 and the last of the firms seized by the federal government were returned to private operation in 1946. Since the Second World War, it is the general consensus in the labor studies literature that the federal government has not provided any meaningful support outside of the NLRB in unions’ efforts to organize firms. Even this limited form of institutional support is considered to be largely ineffective (Cornford. and Miller, 1995). As such, given a robust set of industrial controls, we

²²An example of this policy was the take-over of the North American Aviation Company in which the president issued an executive order to take control of the firm over a strike regarding employment conditions.

²³The War Manpower Commission detailed a subset of all manufacturing sectors that were essential to the effort. I instrument with the share of all workers that were within this subset of manufacturing.

should be quite confident in an empirical strategy based on this foundation

3.4.2 Quasi-experimental Analysis: Empirical Strategy

With these institutional features identified, it is possible to estimate the causal impact of historical union growth²⁴ on the future growth rate of both private and public sector unions using the two instruments described above. The first instrument, the share of workers in a region who worked in industries mandated as “essential activities” during World War II is based on the the list published by the U.S. War Manpower Commission (1942) and the employment data for these industries is gathered from the Census of Manufacturers (1939). The second instrument, the value of all war contracts awarded to firms in a region comes from the County and City Databooks (2000) covering the period. These instruments are used to conduct a two stage least squares analysis using each instrument individually and the pair.

Deciding on the appropriate form of the regression is not necessarily clear. Since the labour movement has contracted so substantially, it is likely that if an increasing returns phenomenon exists it is the case that heavily unionized regions are losing membership more slowly than regions with a fairly weak union presence. Furthermore, since unions rarely decertify, the disappearance of union density is typically driven by two factors: increases in the size of the labour force and firm attrition. With respect to firm attrition, we should expect density to decrease at a similar rate in high and low density locations alike, meaning that with a 50% firm attrition rate and no new organizing, a region with 20% density would fall to 10% while a region with 4% density would fall to 2%. Since firm attrition and creation is likely the dominant factor in membership decline, this suggests that it isn't appropriate to simply choose the change in density as the outcome variable.

To deal with this concern, the dependent variable for this analysis is the percentage change in union density in region, x , between 1953 and any future time period while the independent variable is the absolute change in union membership between 1939 and 1953.²⁵ This functional form is ideal as it allows for a broad definition of economies of scale that accounts for the fact that union density decline is being driven by firm attrition and creation. In addition, I control for a broad array of industry employment levels and population demographics. This combination of controls pushes the data as far as it can go, as a result of the small sample size.

Thus, the baseline specification for the initial OLS analysis is:

²⁴In the instance of this paper, historical union growth happens to be entirely in the private sector.

²⁵Note that this analysis is robust to using the less precise estimates derived from Gallup Polling with 1939 and 1945 as the start and end points.

$$\frac{U_i^Y - U_i^{1953}}{U_i^{1953}} = \alpha + \beta_2(U_i^{1953} - U_i^{1939}) + \beta_2 X_i + e_i$$

Where U_i^Y is union density in state i in year Y , X_i is a vector of industrial and demographic covariates in state i , and e_i is an error term.

In the two stage least squares analysis, the first stage regression is:

$$(U_i^{1953} - U_i^{1939}) = \gamma + \delta_1 W_i + \delta_2 C_i + \delta_3 X_i + v_i$$

Where W_i is the share of workers in state i working in a war industry as of 1940, C_i is the value of war contracts received by state i through the war, U_i^Y is union density in state i in year Y , X_i is a vector of industrial and demographic covariates in state i , and v_i is an error term.

In the second stage, I then regress $\frac{U_i^Y - U_i^{1953}}{U_i^{1953}}$ on the predicted values from the first stage regression and additional control variables.

In addition, I perform a number of robustness tests regarding the validity of the instruments and the broader results. In particular, I perform regressions with the instruments using union membership in both 1939 and 1953 as the dependent variable and the instruments and other controls for the relevant year as independent variables. I also perform this test using the pre-war trend in union membership between 1937 and 1939 as the dependent variable. If the instruments are in fact valid, they should prove to be strong predictors in 1953, but have little predictive power in 1939 or for the pre-war trend. I also perform an over-identification test and report the results.

Finally, it should be acknowledged that it would be ideal to control for the pre-war growth rate. Unfortunately, I am only able to construct a pre-war growth rate running from 1937 to 1939. Although not ideal, I do perform a series of robustness checks using this pre-war growth rate.

3.4.3 Quasi-experimental Analysis: Data

The instrumental variables analysis is conducted at the state level using the union density data discussed earlier in the paper.²⁶ Using this data, I construct the change in union density over the war period, 1939-1953 and the percentage change in total density from 1953-2004.

The primary data for the instrumental variables, the dollar value of war contracts assigned to a state, is gathered from the County and State Data Book from 1944. These data are divided into 4 separate categories which I combine into a single instrumental variable and can also use individual as 4 instrumental variables. These include: funds directed towards military projects, funds for

²⁶This includes a total of 47 states as a handful of states have gaps in the 1939 and 1953 periods.

industrial projects, contracts for combat equipment, and other war-related contracts. The intensity of this shock is straightforward: the greater the number of war contracts entering the region, the greater the incentive for firms to ensure compliance with the NLRB and NWLB.

As an alternative instrumental variable that should capture similar variation, I am able to instrument for the share of regional employment that was included on the War Manpower Commission's listing of essential war industries (U.S. War Manpower Commission, 1942). The War Manpower Commission denoted specific industries, which were a subset of all manufacturing work, that was considered essential to the war effort. The data for this instrument are gathered from the 1939 Census of Manufacturers and then divided based on the listings released by the War Manpower Commission. This measure captures the potential for the awarding of war contracts as it is likely that the vast majority of firms in "essential" war industries would have been eligible for federal war contracts.

To ensure that these shocks are not simply capturing time series effects for regions with a greater share of manufacturing, demographics, government funding or legal institutions, I include controls for an array of demographic and industrial controls gathered from the County and City Data Books (2000). The complete list of controls is available in the Appendix.

3.4.4 Quasi-experimental Analysis: Evidence

Prior to reporting the results of the regression analysis, it is informative to look at the data visually to get a sense to the broader trends.

Figure 3.2 displays the correlation between union growth from 1939-53 to the percent change in union density between 1953 and 2000. If the shocks were, in fact temporary, we would expect the slope of the best-fit line to be negative. If the shocks were durable, but did not impact the future rate of union growth we would expect a flat slope. However, we instead see a positive slope, which is indicative of an increasing returns relationship.

Similarly, we see a positive slope in Figure 3.3 when we replace the change in total membership from 1953-2000 with public sector density in 2000, which is equivalent to the change in public sector membership over the time period. This is a result of the fact that no public sector unions had been certified as of 1953.

These figures are both strongly suggestive of an increasing returns relationship. The baseline OLS regression results in which the percentage change in density between 1953 and 2000 is regressed on the change in density between 1939 and 1953 are also strongly supportive of this interpretation. These results are presented in Table 3.1.

Although not statistically significant, the point estimates suggest that for an average state that saw union density increase by approximately 10% of the labour force, that historical boost has

resulted in 4% to 6% percent increase in union density. Note that this increase is not a change in the raw density figure, but rather a change in the percentage increase in union density over time. While the results in Table 3.1 are certainly not conclusive, they again suggest the likelihood of an increasing returns relationship, as the the coefficient is positive in all three cases and significant with the full set of controls.

The picture when considering public sector density, which was non-existent in the 1939-53 period, is even clearer. The OLS results, displayed in Table 3.1, depict a strong relationship between changes in public sector membership from 1953-2000 and changes in private sector density from 1939-1953. The point estimates suggest that the war boost between 1939 and 1953 for a typical state has increased the percent of the public sector organized in 2000 by 21-24%. It is important to note that this is an increase in absolute public sector union density. A percentage increase cannot be considered as public sector bargaining is not legal at the start of the period.

It is possible, however, that both sets of OLS results could be meaningfully biased. For example, it is possible that some form of state fundamentals, be them demographic, economic, or institutional that drove increasing membership between 1939 and 1953 could be driving changes in membership from 1953-2000. For example, if a state had witnessed a particularly ugly strike or lockout during the earlier period it may have generated a regional culture of fear around organizing, which could in fact determine union membership in both periods. Another possibility would be the presence of racial tensions in the American South, which likely undermined organizing during the war and may continue to undermine organizing possibilities. Given this concern, I turn to the instrumental variables analysis for conclusive results.

The results from the first stage of the 2SLS regressions are displayed in Table 3.2. The results are strong, positive, and significant indicating that unions grew much more rapidly in regions with many war industries or war contracts. The instruments are economically and statistically significant and the F-values are sufficiently high to not raise concerns regarding a weak instruments problem. For a visual sense of this relationship refer to Figure 3.4. It provides further visual support for the power of the war contract instrument, as it is visually clear that regions that the received the most war contracts have witnessed the greatest growth in public sector density.

Given these first stage results, the instrumental variables have sufficient power for the analysis. Further, the F-statistic against the null that the excluded instruments are irrelevant in the first stage is 15 or greater, indicating that the results are robust to a weak instruments criticism. However, this does not mean that they are necessarily valid. A simple method to get a sense of whether the instruments are truly valid is to run separate OLS regressions with union density in 1939 and 1953 as the dependent variables and an array of independent variables, principally the two instrumental variables. If valid we should expect the instrumental variables to have large treatment effects in 1953, but no meaningful treatment effects in 1939. The results of these regressions are presented in

Table 3.3. There are large differences in the coefficients on the instruments in 1939 and 1953, with the treatment effects being larger in 1953. However, this difference is only statistically significant for the war contracts instrument. As such, those are the preferred estimates in the IV analysis, although I do report results with the war industries instrumental variable, as although not statistically significant, the difference is still large. Similarly, I run the regressions with the 1937 to 1939 union membership pre-trend as the dependent variable and neither instrument is found to have any predictive power. In addition, over-identification tests for the instrumental variable specifications result in a p-value of approximately 0.75, indicating that we cannot reject the null hypothesis that the instruments are exogenous. As a further robustness check, I perform a reduced form analysis in which I consider the direct impact of the instruments on union growth post-war and present-day public sector union density. In general, the results regarding public sector union density should be considered the strongest as there are few other viable pathways through which historical war contracts could impact public sector union membership than increasing returns.

Having considered the power and validity of the instrumental variables strategy, I next analyze the second stage results and to determine whether the one-time shock to union density during the Second World War is temporary or durable in its effects.

The second stage results, presented in Table 3.2, indicate an economically and statistically significant positive relationship between union growth during World War II and growth post-war. The treatment effect is quite large with a typical state, experiencing a 10% increase in density during the war, seeing a subsequent 12% to 15% percent increase in density between 1953 and 2000. A one standard deviation increase in the change in union density between 1939 and 1953 (4.817%) would result in a percentage increase in union density between 1953 and 2000 of 6.1% to 7.1%. This is clear evidence of the increasing returns to union density phenomenon. In other words, regions that witnessed the most union growth during World War II have seen the smallest decline in union membership since. In fact, it's overwhelmingly the case that states that we view as labour's heartland today such as Michigan, New York, and Pennsylvania were also the heartland of American war production.

We can also look to the second stage results with public density as the outcome variable in Table 3.2. This relationship is also economically and statistically significant with public sector density alone, which should be the cleanest signal of the increasing returns phenomenon. The average treatment effect is quite large, resulting in a 25% to 31% increase in public sector density subsequently. A one standard deviation increase in the change in union density between 1939 and 1953 (4.817%) would result in current day public sector union density being between 12.2% and 15.3% greater. Having confirmed that the increasing returns phenomenon is a dominant feature driving the arrangement of union membership, the next step is to turn our attention to the mechanisms driving this permanence and the increasing returns phenomenon.

3.5 Causal Mechanisms

The results in the prior section show clear evidence that the regional gains made by the union movement were long-lasting and were subject to significant increasing returns to union density. Given the robust controls used, which should largely account for industry-specific union attrition, there are only a few plausible mechanisms that could be driving this effect.

First and foremost amongst these are organizing decisions. Unions themselves may be choosing to organize,²⁷ both in the private and the public sectors, in regions that are already the most highly organized. This mechanism could be driven by a variety of factors. For example, the presence of large numbers of union members in an area may result in a cultural shift making workers more likely to support a union drive. It may also be easier for unions to mount the resources needed to run an organizing drive in union-heavy states, particularly those unions that conduct organizing through their state federations rather than through the international. Directly related to organizing drives, high local membership may make workers themselves more receptive to joining a union, which could be an underlying explanation for targeted union drives to high-density regions or simply result in a greater election win rate.

Beyond organizing it may also be the case that high local union membership creates a culture in which employers are less willing to abuse their employees or fight organizing drives (legally or illegally). This could result from local boycotts or support, but it could also be a process through which employers learn how to function in a union environment.

A final potential mechanism is that high local membership may result in a more pro-union legal environment, which could open membership to additional workers, allow for the union or agency fee shop, or aid in organizing drives. In the subsections below, I analyze these mechanisms.

3.5.1 Causal Mechanisms: Organizing

Using a similar regression strategy to that employed in the main body of the paper, I analyze whether unions affiliated with the AFL-CIO conduct more or less organizing drives in regions of the country that witnessed the greatest level of growth during World War II. Along with the data described previously, I merge the primary dataset with the Food and Allied Service Trades union organizing database from the AFL-CIO research department. This dataset includes all organizing drives that occurred between 1964 and 2001.

The regression analysis, found in Tables 3.5 and 3.6, shows that AFL-CIO unions have clearly conducted more organizing drives²⁸ in regions that witnessed the highest rates of union growth

²⁷Note that this refers to both the active central decision of a national union or state federation or the decision of workers on the shop floor to initiate a grassroots organizing drive

²⁸There have also been more elections and more successful elections.

over the war period. While not a particularly surprising result, it indicates that not only are unions maintaining more membership in high density regions, but that they are replacing attrition with newly organized members.

In addition, from the previously reported public sector density results the regions that witnessed the greatest growth in unions during World War II have also seen the greatest increase in representation of the public sector workers.

These results are unsurprising, but they do indicate that the increasing returns phenomenon is not simply driven by differential attrition, but by the differential creation of new unions. What these results cannot tell us, unfortunately is why these unions are choosing to organize in these high density regions, although this could be driven by employer resistance or legal institutions, which are considered below.

3.5.2 Causal Mechanisms: Legal Institutions

In order to test for the importance of legal institutions in this relationship I employ two measures. First, I employ an index of public sector collective bargaining rights generated from the data in Freeman and Valletta (1988). The nature of this index variable is described in detail in the Data Appendix. Second, I use a binary variable as the outcome as to whether a state is “right-to-work,” as of 2004 meaning that it is illegal for unions to negotiate a union security clause.

As shown in Figure 3.7, the correlation between an index covering access to public sector collective bargaining rights and the growth of private sector unions during the 1939-53 period is fairly weak. This result is confirmed in regression analyses which find no economically or statistically significant relationship between historical private sector density and the legislation index.

However, if instead we consider the relationship between historical union growth and the “right-to-work” status of a state we can see a clear negative relationship between historical union growth and right-to-work status, as displayed in the regression analysis displayed in Tables 3.5 and 3.6. These results show a robust negative relationship between union growth from 1939-53 and the Right-to-Work status of a state as of 2004.

This suggests that private sector unions did play a role in shaping state-level labour law in one of two ways. Firstly, it is possible that unions were able to exert much greater influence over the state-wide ballot propositions that have typically been used to enact right-to-work legislation. Secondly, it is potentially the case that even in states with the strongest unions historically they only had the political strength to influence this one dimension of the political spectrum.

3.5.3 Causal Mechanisms: Employer Resistance

The final mechanism that I consider is whether historical union density is related in anyway to employers' response to unions in the workplace or organizing campaigns. While there is no perfect measure for employer resistance, I make use of NLRB unfair labour practice (ULPs) charges as a measure of resistance. I have these measures both for existing unions and union drives courtesy of the AFL-CIO FAST database. As in the analysis of organizing drives, I make use of the total number of allegations that have occurred post 1964.

While not conclusive, the results indicate that regions with the greatest union growth during the war period have had the fewest numbers of unfair labour practice chargers per worker since. This could play into the increasing returns phenomenon in several ways. For example, it could mean that attrition is lower in those regions or, as is more likely the case, that organizing campaigns and first contract campaigns have a much greater rate of success.

3.6 Conclusion

While the American labour movement has been in a steady decline for the last 50 years, this paper provides a better understanding of the dynamics of labour's decline and its preceding growth. Union density has been highly persistent with only a major spatial re-arrangements occurring during World War II. But the defining feature of the growth and decline of the union movement is the fundamentally important role played by increasing returns. States that received the "war boost" in the 1940s are the states that still have a meaningful labour presence today, with their levels of union density declining at a much slower rate than less organized states. It appears that that this relationship may be driven by an equilibrium in which unions invest the majority of their organizing resources into "union" states and employers in "union" states put up significantly less resistance than in other states.

These results should be particularly worrying for the labour movement as they suggest that one-time legislative moves to cripple the labour movement in states such as Wisconsin, Indiana, and Michigan may result in an irreversible decline in union membership. With some unions in Wisconsin losing nearly half of their members in the wake of Governor Walker's clampdown on collective bargaining rights (Belkin and s Maher, n.d.), it appears unlikely that a reversal of his legislation will restore the state's prior level of union membership.

For the American labour movement to recover, the results of this paper indicate that the movement needs another "game-changing" moment. The unfortunate reality of labour's current situation is that in the status quo it doesn't matter how many wins they have; all it takes is one sudden legislative move such as in Wisconsin or Michigan to permanently cripple labour's ability to grow in

the state. And given the stagnation and decline in union membership in Canada, where card-check is more frequently available it is not clear that even the passage of the Employee Free Choice Act would have been sufficient to meaningfully reverse this trend.

3.7 Appendix: Data

In studying regional union membership patterns there are two types of datasets that can be constructed: a long-run panel of state-level union density and a short-run panel of MSA-level union density. These are very different units of analysis and the most interesting analysis can only occur at the state-level as a result of data limitations, as modern MSA-level information is only available starting in the 1980s. The advantage of working at the state-level, however, is that while the boundaries of MSAs may change state boundaries are constant. This is convenient as changing MSA boundaries could certainly drive changes in density rather than any real activity.

3.7.1 Data Collection

The state-level data are gathered from a variety of sources. Beginning in 1937, it becomes possible to estimate a state-level measure of union density using results from dozens of Gallup Polling surveys. Using the weights from iPoll, I generate estimates of state-level union density in 1937, 1939, and 1945.

The regularity of available data remains scarce until 1964. I use a combination of state membership totals from the NBER (1939, 1953), from Troy (1957), and the BLS (1964-1973) pre-1974. From 1974 onwards, annual state-level union density data can be derived from the CPS which is provided courtesy of Hirsch and Macpherson (2003). While the CPS data are a direct measure of density, the NBER and BLS data are based on the membership records of individual unions rather than the sampling of individuals. As such, these 3 data sources are, as with the Knights of Labor Data, not perfectly suited for direct comparison, although certainly the best figures available.

3.7.2 Dependent Variable Choice

It is not immediately clear what the correct metric should be when considering the spatial and temporal growth of the labour membership. Union density, the share of eligible workers who are members or service-fee payers of a union is the measure typically used. The advantage of employing union density is that it allows direct comparisons between regions of different populations and sizes. As such, I make use of union density as the primary measure in this analysis. However, employing union density rather than membership masks some of the underlying variation in the data. In particular, density may fall as a result of either a decline in absolute union membership or a growth in population. As such, I also conduct the analysis using total membership figures and the share of all union members in the United States in a region. Analyzing changes in the variation of the share of union members in a state is particularly useful for developing a sense as to whether

union growth and contraction are occurring proportionately across low and high-density states.

3.7.3 Metrics and Methodology

I use three different measures to analyze union variation over time: the relative variation of log union membership, the relative variation of union density, and the relative variation of the share of all union members in region x . These numbers are relative in that I divide the variance in year y by the variance in 2004.

All three variance measures capture, to varying degrees, the concentration of the labour movement, with important differences in their interpretation. It is useful to calculate the relative variation for both total membership and density, as it allows us to get an idea as to whether changes in density are being driven by decreasing membership or increases in the labour force. The relative variation in the share of all union members in a state is a particularly useful measure as it captures whether changes in variance are driven by overall decline in union membership or a spatial relocation of trade union members.

To analyze the degree of persistence in the data, I use two measures: the raw density correlation in year y with density in 2004 and the rank density correlation in year y with the rank density in 2004. As in the analysis of relative variation, these two measures are meant to capture whether changes in persistence are driven by changing union membership or changing population. In addition, these measures are able to indicate whether labour's heartland is locationally shifting over time.

3.7.4 Data Analysis

Union density remained low throughout most of the early 20th century, generally hovering in the 10% to 13% range, aside from a temporary blip during World War I. The picture drastically shifts in the 1930s with a combination of an increasing union wage premium, better public opinion of unions, and the passage of the National Industrial Recover Act (NIRA) that introduced legislative protections for collective bargaining. This combination of factors led to a dramatic increase in union membership preceding World War II and previously unseen levels of membership, density, and variance. Prior to World War II, variance in membership and density typically moved with total union membership. A key observation is that the variance in the share of membership initially peaked in 1939 at 1.6 times contemporary variance.

The next available data points are in 1945 (from Gallup polling) and 1953 (from AFL-CIO membership information), after the Second World War. During the war itself we see a second expansion in union density in which both density and variance reach their peak at the 1953 data point. Even with the passage of the Taft-Hartley Act in 1947 and the introduction of right-to-work

legislation across much of the south, union density would continue to climb for several more years after this period reaching nearly 40% nationally in the late 1950s.

From this point onwards, the labour movement undergoes a near continuous decline in the variance of both membership and density. However, the variance in the share of total union membership in a state remains relatively stable from 1964 until the the 1980s at which point it begins to climb. This could indicate that the labour movement was able to leverage its national power to enable organizing in relatively low density regions until labour's power began to collapse in the Reagan era. In particular, this phenomenon could be linked to the roughly 50% decline in organizing during the Reagan administration, which may have disproportionately affected low density states. The rise in the variance of the share of membership in a state throughout the 1980s, 1990s, and 2000s along with the relatively high variance prior to labour's growth in World War II suggests that when labour struggles, it tends to concentrate in smaller and smaller geographic pockets.

3.8 Appendix: Figures

Union Density Growth 1939-1953 and Percentage Change in Union Density Since WWII

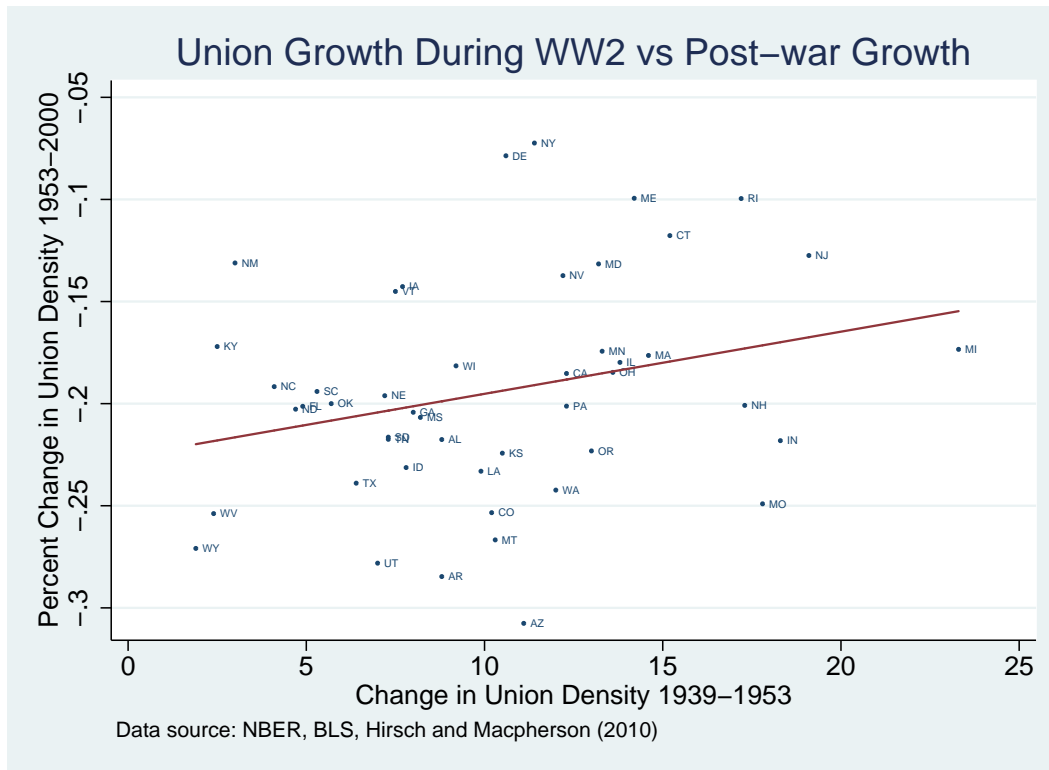


Figure 3.2 This figure plots the absolute change in union density between 1939 and 1953 on the x axis versus the change percentage change in union density between 1953 and 2000 on the y axis. Source: Gallup Organization (1939, 1945), Troy (1957), Hirsch and Macpherson (2010).

Union Density Growth 1939-1953 and Contemporary Public Sector Union Density

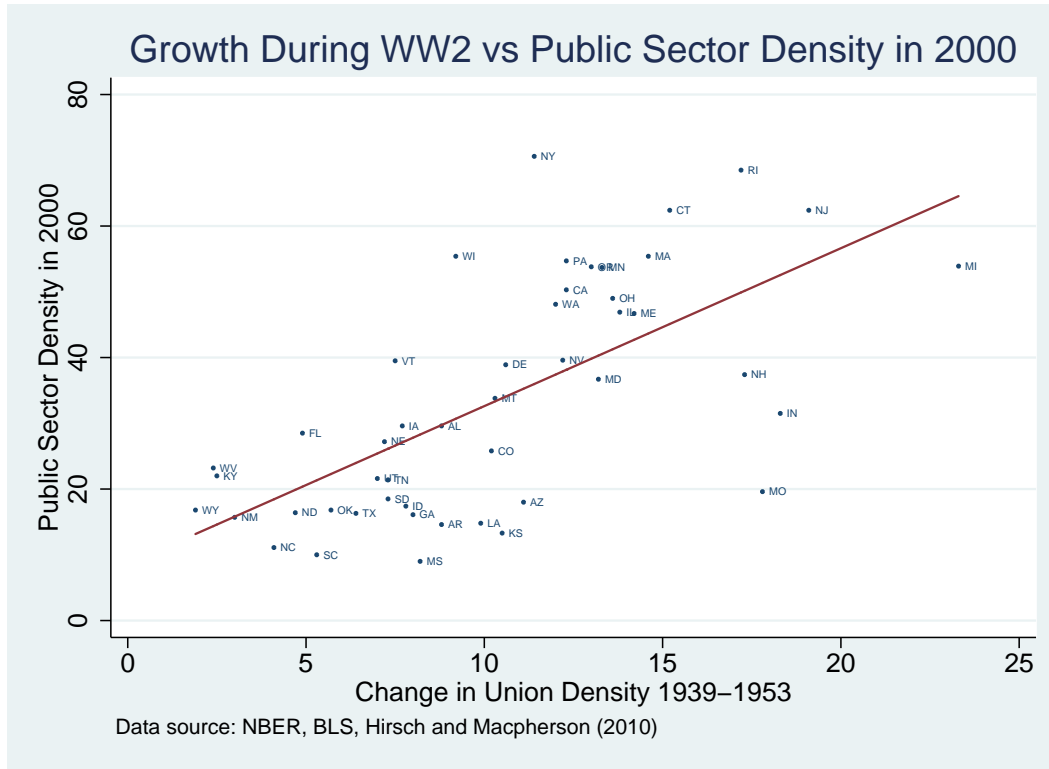


Figure 3.3 This figure compares contemporary public sector union density to the absolute change in union density during the Second World War. The current level of public sector union density is also the the change since 1953, as public sector union density was non-existent at that point in time. Source: Gallup Organization (1939, 1945), Troy (1957), Hirsch and Macpherson (2010).

Union Density Growth 1939-1953 and Total Value of War Contracts

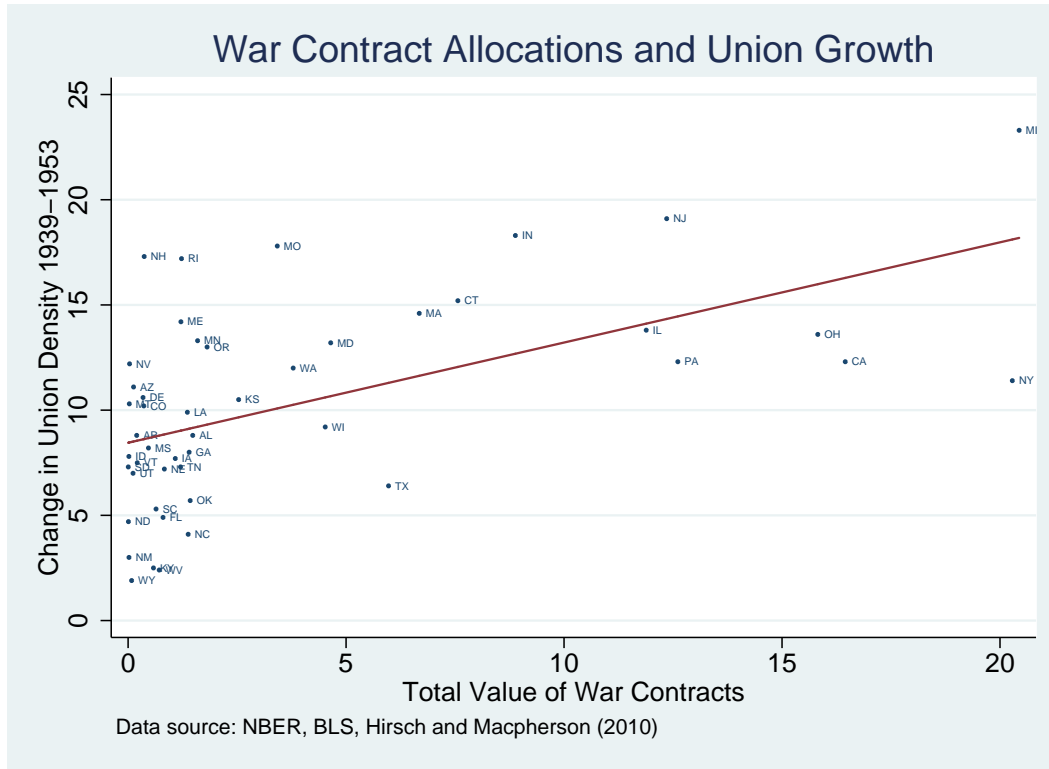


Figure 3.4 This figure compares the absolute change in union density during the Second World War to the total value of governmental war contracts granted to firms located in the state. War contracts are in billions of dollars. Source: Gallup (1937, 1945) Troy (1957), County and State Data Book (2000).

Contemporary Public Sector Union Density and Total Value of War Contracts

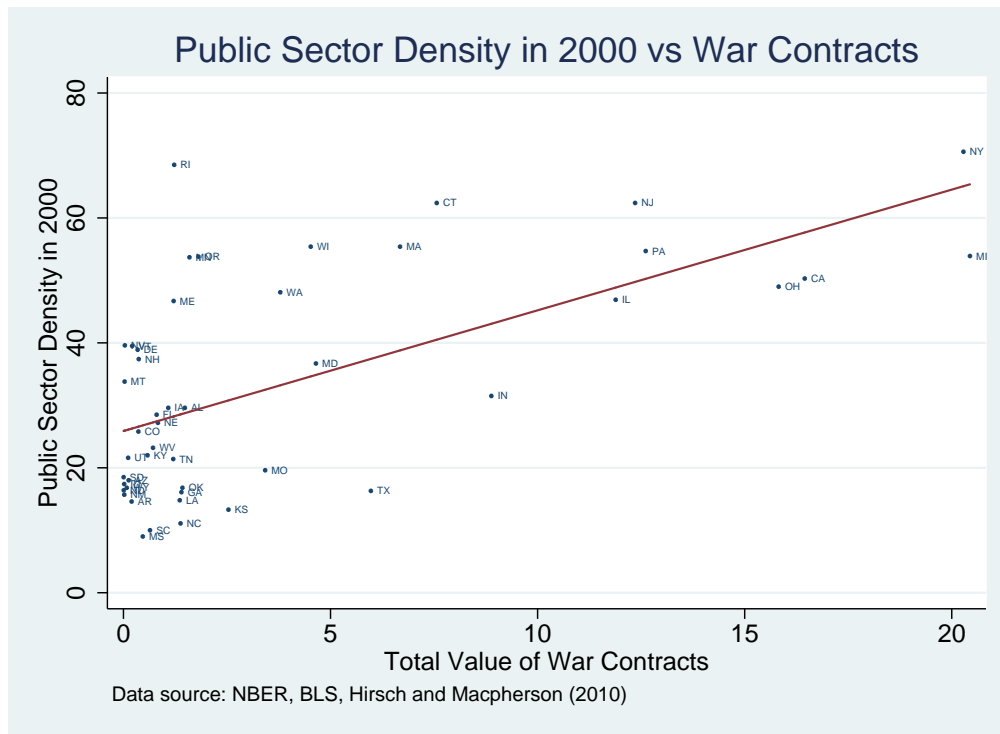


Figure 3.5 This figure compares contemporary public sector union density in 2000 to the total value of governmental war contracts assigned to firms located in the state during the Second World War. War contracts are in billions of dollars. Source: County and State Data Book (2000), Hirsch and Macpherson (2010).

Public Sector Labour Law Index and Union Growth 1939-53

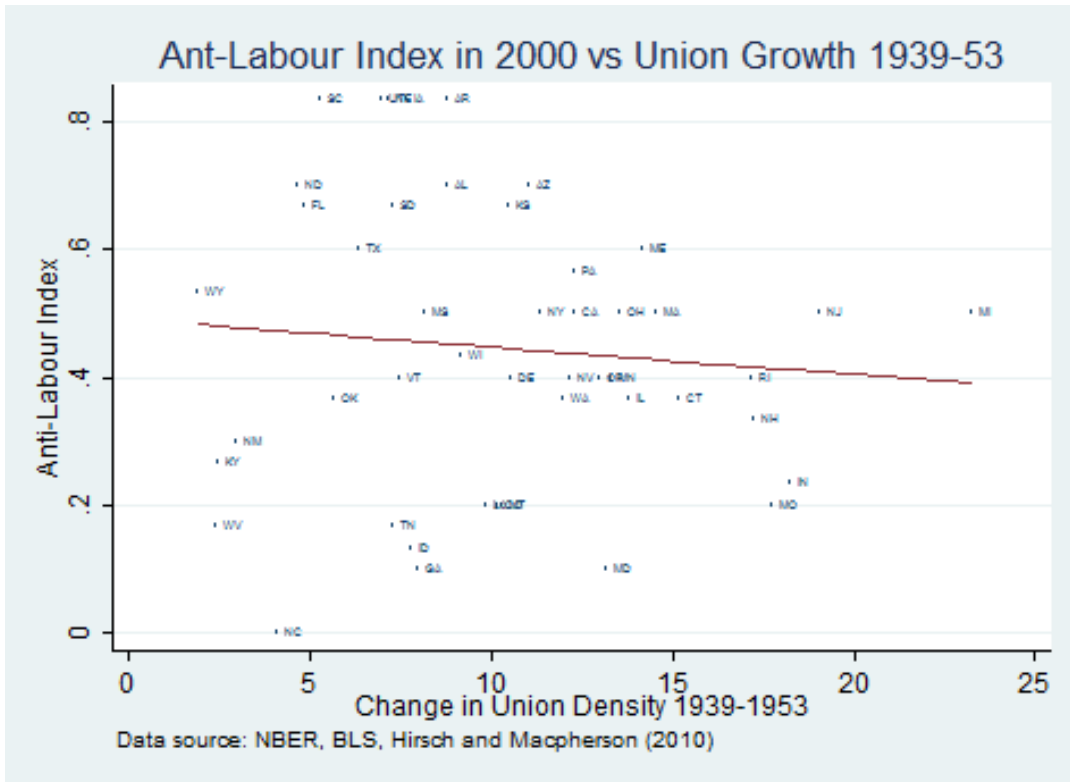


Figure 3.7 This figure compares the public sector labour law index from Freeman and Valletta (1988) to the absolute change in union density during the Second World War. Source: Gallup (1939, 1945), Troy (1957), Freeman and Valletta (1988).

3.9 Appendix: Tables

OLS Regressions with Private and Public Sector Union Density

A. Dependent Variable: Percent Change in Union Density 1953-2000		
Change in Union Density 1939-1953	.006*	.004
	[0.003]	[0.003]
Observations	47	47
R^2	0.074	0.48
Covariates		E, D

B. Dependent Variable: Change in Public Sector Density 1953-2000		
Change in Union Density 1939-1953	2.4***	2.1***
	[0.41]	[0.45]
Observations	47	47
R^2	0.43	0.86
Covariates		E, D

Table 3.1 The models presented are least-squares estimates of equation 1. The primary independent variable is the change in union density between 1939 and 1953. D represents a robust set of demographic controls, which are fully listed in the Data Appendix while E represents a set of employment and industrial controls. Source: Gallup (1939, 1945) Troy (1957), Hirsch and Macpherson (2010), County and State Databook (2000), Census of Manufacturers (1939).

2SLS Instrumental Variables Analysis

Stage 1. Dependent Variable: Change in Union Density 1939-1953			
War Industries		150.616***	122.972***
		[28.733]	[228.416]
Total Contracts	1.201***		.761***
	[0.321]		[0.282]
Observations	47	47	47
R^2	0.83	0.88	0.91
Covariates	E,D	E, D	E, D

Stage 2a. Dependent Variable: Percent Change in Union Density 1953-2000			
Change in Union Density 1939-1953	.0126**	.0148*	.0131**
	[0.00599]	[0.00829]	[0.00581]
Observations	47	47	
R^2	0.89	0.89	0.89
Covariates	E,D	E, D	E, D

Stage 2b. Dependent Variable: Public Sector Union Density in 2000			
Change in Union Density 1939-1953	2.846***	3.174***	2.537***
	[0.618]	[0.724]	[0.676]
Observations	47	47	
R^2	0.46	0.33	0.33
Covariates	E,D	E, D	E, D

Table 3.2 The models presented are two-stage least-squares estimates of equations 2 and 3. In the first stage, the change in union density between 1939 and 1953 is regressed on the share of workers in a war industry or the value of allocated war contracts. Stage 2a has the percentage change in total union density as the dependent variable while Stage 2b has the change in public sector union density. Specification one includes war contracts, specification two includes the share of workers in war industries, and specification three includes both instruments. D represents a robust set of demographic controls, which are fully listed in the Data Appendix while E represents a set of employment and industrial controls. Source: Gallup (1939, 1945) Troy (1957), Hirsch and Macpherson (2010), County and State Databook (2000), Census of Manufacturers (1939).

Instrument Variables Validity Test

Dependent Variable - Union density			
Year	1939	1953	Pre-War Trend
War Industries	0.412 [0.384]	1.60** [0.743]	-3.54 [93.545]
Total Contracts	0.00288 [0.00277]	0.0244*** [0.00559]	1.06 [0.628]
Obs.	47	47	47
Covariates	E, D	E, D	E, D

Table 3.3 OLS regressions of union density in 1939 or 1953 and the pre-war change in union density on the share of workers employed in war industries during World War II and the value of war contracts allocated to a state. D represents a robust set of demographic controls, which are fully listed in the Data Appendix while E represents a set of employment and industrial controls. Source: Gallup (1939, 1945) Troy (1957), Hirsch and Macpherson (2010), County and State Databook (2000), Census of Manufacturers (1939).

Reduced Form Regressions Using the Instrumental Variables

A. Dependent Variable: Percent Change in Union Density 1953-2000		
War Industries	0.00453 [0.00329]	-0.00210 [0.00768]
Total Contracts	1.317 [1.000648]	2.223* [1.151]
Observations	47	47
R^2	0.13	0.35
Covariates	E, D	

B. Dependent Variable: Change in Public Sector Density 1953-2000		
War Industries	1.151*** [0.387]	2.937** [0.937]
Total Contracts	300.198** [117.898]	190.0944 [140.455]
Observations	47	47
R^2	0.46	0.57
Covariates	E, D	

Table 3.4 The models presented are least-squares estimates. D represents a robust set of demographic controls, which are fully listed in the Data Appendix while E represents a set of employment and industrial controls. Source: Gallup (1939, 1945) Troy (1957), Hirsch and Macpherson (2010), County and State Databook (2000), Census of Manufacturers (1939).

OLS Mechanism Regressions

A. Dependent Variable: Number of Union Elections post-1964		
Change in Union Density 1939-1953	182.83*** [60.57]	72.08** [24.43]
Observations	47	47
R^2	0.18	0.92
Covariates	E, D	

B. Dependent Variable: Public Sector Labour Law Index		
Change in Union Density 1939-1953	-0.0043 [0.0068]	-0.0043 [0.0081]
Observations	47	47
R^2	0.01	0.68
Covariates	E, D	

C. Dependent Variable: Right-to-Work Status		
Change in Union Density 1939-1953	-0.054*** [0.013]	-0.046*** [0.015]
Observations	47	47
R^2	0.28	0.46
Covariates	E, D	

D. Dependent Variable: Number of ULP Charges per million members post-1964		
Change in Union Density 1939-1953	1072.55** [416.41]	358.91** [172.90]
Observations	47	47
R^2	0.14	0.93
Covariates	E, D	

Table 3.5 The models presented are least-squares estimates of equation 1, but with alternate dependent variables: A. The number of union elections post-1964 is regressed on the the change in union density between 1939 and 1953; B. The value of a public sector labour law index is regressed on the the change in union density between 1939 and 1953; C. A right-to-work dummy is regressed on the the change in union density between 1939 and 1953; D. The number of ULPs post-1964 is regressed on the the change in union density between 1939 and 1953. D represents a robust set of demographic controls, which are fully listed in the Data Appendix while E represents a set of employment and industrial controls. Source: Gallup (1939, 1945) Troy (1957), Hirsch and Macpherson (2010), County and State Databook (2000), Census of Manufacturers (1939).

IV Second Stage Mechanism Regressions

A. Dependent Variable: Number of Union Elections post-1964			
Change in Union Density 1939-1953	264.64*** [84.33]	86.66* [50.97]	151.17*** [48.09]
Observations	47	47	47
R^2	0.91	0.88	0.91
Instruments	1, 2	2	1
Covariates	E, D	E, D	E, D

B. Dependent Variable: Public Sector Labour Law Index			
Change in Union Density 1939-1953	-0.0019 [0.011]	0.010 [0.012]	-0.010 [0.012]
Observations	47	47	47
R^2	0.07	0.04	0.08
Instruments	1, 2	2	1
Covariates	E, D	E, D	E, D

C. Dependent Variable: Right-to-Work Status			
Change in Union Density 1939-1953	-0.054* [0.032]	-0.094*** [0.030]	-0.079*** [0.026]
Observations	47	47	47
R^2	0.29	0.34	0.32
Instruments	1, 2	2	1
Covariates	E, D	E, D	E, D

D. Dependent Variable: Number of ULP Charges post-1964			
Change in Union Density 1939-1953	550.802** [220.172]	967.648*** [291.858]	220.456* [240.151]
Observations	47	47	47
R^2	0.90	0.87	0.90
Instruments	1, 2	2	1
Covariates	E, D	E, D	E, D

Table 3.6 The models presented are the second stage of the least-squares estimates of equations 2 and 3, but with alternate dependent variables: A. The number of union elections post-1964 is regressed on the change in union density between 1939 and 1953; B. The value of a public sector labour law index is regressed on the the change in union density between 1939 and 1953; C. A right-to-work dummy is regressed on the the change in union density between 1939 and 1953; D. The number of ULPs post-1964 is regressed on the the change in union density between 1939 and 1953. D represents a robust set of demographic controls, which are fully listed in the Data Appendix while E represents a set of employment and industrial controls. Source: Gallup (1939, 1945) Troy (1957), Hirsch and Macpherson (2010), County and State Databook (2000), Census of Manufacturers (1939).

Summary Statistics Over Time

Year	Membership	Density	Relative Var of Density	Relative Var of Share	Density Raw Corr With 2004	Density Rank Corr With 2004	History
1939	8.8	21.5	3.13	1.60	0.58	0.61	Start of World War 2. The National Industrial Recovery Act and the Wagner Act are passed in 1933 and 1935 respectively. The Fair Labor Standards Act is passed in 1938.
1953	16.2	32.6	4.31	0.94	0.78	0.79	Earliest post-war data available. The Taft-Hartley Act is passed in 1947. Florida and Arkansas pass the first right-to-work legislation in 1944. Passage of the LMRDA.
1964	17.9	29.3	3.63	0.871	0.87	0.88	The AFL and CIO merge in 1955. The Landrum-Griffith Act is passed in 1959. The National Farm Workers Association (later the UFW) is founded in 1962.
1974	18.2	26.2	2.70	0.86	0.88	0.90	Passage of OSHA in 1970. First major postal worker strike. UFW reach an agreement with graper growers.
1984	17.3	19.1	1.72	0.84	0.94	0.92	Reagan breaks the PATCO in 1981, resulting in a massive decrease in union organizing and an accelerated decline in union membership.
1994	16.7	15.7	1.25	0.84	0.95	0.94	NAFTA is passed in 1994.
2004	15.4	12.6	1	1	1	1	

Table 3.7 Figures generated as outlined in the paper body from Source: Gallup (1937, 1939, 1945), Troy (1957), Garlock (2009), and Hirsch and Macpherson (2010).

Chapter 4

The Slave Trade, State Behaviour, and Ethnic Stratification in Africa

4.1 Introduction

The last decade has been a golden age for the study of African economic history. As noted by Hopkins (2009) “economists have produced a new economic history of Africa in the course of the past decade,” with two primary narratives. The first narrative argues that “Africa has suffered a ‘reversal of fortune’ during the past 500 years.” The second narrative suggests that “ethnic fragmentation, which has deep historical roots, is a distinct cause of African economic backwardness (page 155).” In this article, we argue that these narratives are fundamentally interconnected. In particular, we argue that Africa’s slave trade, which helped drive its “reversal of fortune,” increased the degree of ethnic fragmentation in Africa today. This chapter is a combination of two papers: Whatley and Gillezeau (2011a) and Whatley and Gillezeau (2011b). In the first of these articles, we develop a model showing how increasing prices for slaves may have altered state behaviour in a manner consistent with increasing ethnic stratification over time. In the second article, we empirically test this relationship.

To prelude the results, using both OLS and instrumental variables analysis, we find an economically and statistically significant positive relationship between various measures of ethnic fragmentation in the present and slave exports from the western coast of Africa in the past. This finding is entirely consistent with our model under which increasing slave prices brought on by European demand would encourage smaller states, more slave raiding, and greater ethnic diversity. These results are significant when considered in the context of other recent work in African economic history. In particular, the results aid in the interpretation of Nathan Nunn’s analysis of the slave trade and GDP (Nunn, 2008a) in which he finds that the transatlantic slave trade resulted in the long-term, systematic underdevelopment of many African economies. This work does not capture the mechanism through which this underdevelopment may have occurred and while Nunn and Wantchekon (2011) make an effort to explain the process through the development of mistrust it seems unlikely that this is the only causal mechanism. The strong positive relationship between ethnic fractionalization and slave exports found in this paper suggests that increased ethnic fractionalization may have been a prominent factor in this underdevelopment. This would be consistent

with work by Levine and Easterly (1997), Collier (1998), Bates (2008) and others, but rather than see ethnic fractionalization as an exogenous source of social conflict this paper presents evidence that it is also an endogenous outcome of the social conflict associated with slaving. Finally, this paper cautions that controlling for ethnic fractionalization will result in underestimates of the impact of slavery on development.

This chapter begins with a description of the existing literature on ethnic identity, the slave trade, and the relationship of these elements to development in Africa. This is followed by a description of the empirical strategy for determining the relationship between the slave trade and contemporary ethnic stratification and the results of the empirical analysis. Following this, we develop a model that explains how European demand for slaves may have altered the behaviour of historical African states in a manner that could explain this result. We conclude by considering the broader implications of this work.

4.2 Ethnic Identity, the Slave Trade, and Development

A number of important studies have focused on ethnic stratification and its exogenous impact on economic performance in Africa. The best known is a study by Levine and Easterly (1997) which argues that roughly 25 percent of the difference in the growth experiences of African and Asian economies can be attributed to the greater ethnic diversity in Africa. While it is unclear precisely how ethnicity influences economic performance, the authors present some evidence on a negative relationship between ethnic diversity and under-investment in schooling, weak financial institutions, poor infrastructure and black-market premia.

Collier (1998) cautions that the relationship between ethnicity and economic performance is more complex and contextual than this. While arguing that ethnic diversity can become a drag on growth, Collier adds the proviso that the negative effects are largely confined to economies with limited individual rights. In fact, ethnic diversity can be a plus. While democratic institutions can effectively mitigate the negative effects of ethnic diversity, highly diverse countries are less likely (not more likely) to break out into ethnic conflict, presumably because of the higher cost of inter-ethnic cooperation. Bates (2008) contextualizes the impact of ethnicity in a similar way. He argues that the predatory nature of the post-colonial state in many African countries created political and military challenges to its authority. When the challenges intensified, ethnic stratification also intensified to the point where “things fell apart.”

The literature on ethnic conflict tends to assume that the oppositional character of ethnic identity, with its insider-outsider distinctions, is a source of conflict that impedes growth. A useful alternative view is offered by Esteban and Ray (2008). In situations where political behavior can be modeled as “prize grabbing” mass mobilization, there is a built-in bias towards ethnic rather than class mobilization because ethnic groups include the rich, who have the resources, and the poor, who provide the labor needed to mount a mass movement. Conflict will tend to occur along ethnic lines, not because ethnic identity is inherently conflictual but because it is easier to mount an

ethnically-based mass movement.

In all of these examples ethnicity is treated as exogenous and given to the situation. In fact, Collier (1998) expresses an uneasiness about the negative connotations being attached to ethnic diversity in Africa because "... there is nothing a country can legitimately do about its ethnic composition." But there is a large and growing literature which attempts to endogenize ethnic identity, to varying degrees. This literature tends to emphasize the fact that people have multiple identities that are malleable, politically manipulable and situational. Posner (2005), for example, develops and tests a model explicitly designed to identify the conditions under which individual Zambians choose to organize around one particular identity rather than another. Individuals are viewed as having a portfolio of identities from which they can choose, and it is postulated that individuals choose the one that has the best chances of putting them in the winning coalition. The important political choice in post-colonial Zambia is between ethnic identity and language identity, and Posner is successful in revealing the conditions under which people choose one or the other. Still, in this formulation ethnic identity as distinct from language identity retains a high degree of exogeneity. The choice is between ethnic and language identity, not between competing ethnic identities.

Ethnic identity becomes more endogenous and malleable when one leaves the realm of rational choice and takes a historical view. Posner (2005), for example, spends two chapters tracing the historical origins of Zambia's ethnic and language groupings. The conventional wisdom here emphasizes the role played by the institutions of colonial rule, not the conflict and violence of the slave trade. Quoting Posner,

"In tracing the origins of contemporary *Zambian* ethnic identity to the institutions of colonial rule, I am following an extremely well-trodden path. In fact, the notion that the colonial state created or heightened the importance of ethnic identities in post-colonial Africa is so accepted these days that to argue *otherwise* would probably be controversial (2006 page 23)."

Yet *otherwise* is precisely what we want to argue. The conventional view roots the salience of ethnic identity in Africa in what Firmin-Sellers (1996) calls "the logic of indirect rule." Colonial administrations, befuddled by the variety of local ethnic political economies they encountered, found it difficult to extract economic surplus directly. In situations like this, characterized by asymmetric information, the principal (the colonial power) has an incentive to share the surplus with agents (indigenous authorities) who know how to monitor and direct the production and flow of surplus to the top. The colonial power stood behind and strengthened the indigenous territorial authorities, often drawing maps to clearly delineate boundaries. Posner (2005) argues that the logic of indirect rule also provided incentives for local inhabitants to identify with the prevailing social prescriptions that legitimize the local authority. It is through this identity – this ethnic identity – that local inhabitants gained access to important public goods.

This view is plausible and well-documented. The point we want to make in this chapter is that the slave trade helped shape the ethnic landscape that the colonial powers encountered in Africa. We are not trying to overturn the conventional wisdom, but to root it more firmly in the

history of Africa. In fact, we use the many maps of ethnic boundaries drawn by colonial authorities to construct our measure of ethnic diversity across the African landscape. We then ask did the intensity of past slaving activities influence this ethnic landscape? Our prior is that the slave trade influenced the spatial distribution of political authority and the salience of ethnic identity. The idea is straightforward. When the international demand for Africans as slaves penetrates an area of Africa it drives the marginal value of people as captives above their marginal value as producers to be taxed. Consequently, increases in demand price reduce the incentives to build states and increases the incentive to raid for slaves. The immediate effect is smaller states and a greater number of independent villages. To the extent that there exist prohibitions against enslaving one's own, then an increase in demand price will also intensify the incentive to produce "outsiders" who can be raided. Finally, to the extent that local political authority is absolutist, increases in demand price will also reduce the incentive to build coalitions across villages to defend against slave raiders. All of these forces contribute to a greater degree of ethnic diversity across the African landscape. We believe that recognition of a history of slaving in Africa can help explain the salience of ethnic identity among African people, the great diversity of ethnic identities on the continent of Africa, the spatial distribution of ethnic authorities, and the conflictual nature of some ethnic relations.

4.3 Empirical Strategy

In order to determine the impact of the transatlantic slave trade on the long-run development of ethnicity in Africa, we compare the number of ethnicities in equally sized regions along the West African coast with the number of slaves that departed from these regions. Our basic strategy is as follows. We divide the western coast of Africa into 200 evenly spaced points starting at the northernmost point of Tunisia and ending at the middle of South Africa. The distance between points is 50 kilometres. Both the dependent and independent variables are constructed from spatial data that fall within circular buffer zones around these points. Our dependent variable is the number of ethnicities in the region around each coastal point. The spatial ethno-linguistic data is taken from the digitized Peoples Atlas compiled by Felix and Meur (2001). It is our understanding that this is the most modern Africa-wide ethno-linguistic classification map available. For robustness, we also use the ethno-linguistic mapping of Africa developed by Murdock (1959). This is not our preferred measure because it stifles much of the variation found in more-modern mappings and appears to group sub-ethnicities together. Our independent variables include the number of slaves exported from nearby African ports, courtesy of the Transatlantic Slave Trade Database,¹ soil and terrain slope constraints, population density in 1960,² elevation,³ local agricultural suitability as measured by climate, forest coverage, and desert coverage.⁴

¹Eltis, David. *The Trans-Atlantic Slave Trade Database*. <http://www.slavevoyages.org> (accessed October 1, 2010)

²UNESCO. *UNEP Sioux Falls Clearinghouse* <http://na.unep.net/datasets/datalist.php> (accessed October 1, 2010)

³USGS. *USGS Geographic Data Download* <http://edc2.usgs.gov/geodata/index.php>. (accessed October 1, 2010)

⁴IIASA *Global Agro-Ecological Assessment for Agriculture in the 21st Century: Methodology and Results*. <http://www.iiasa.ac.at/Research/LUC/GAEZ/index.htm> (accessed October 1, 2010)

We perform our regression analysis with 3 different circular buffer sizes: 125 kilometres, 250 kilometres, and 500 kilometres in radius. In our analysis using the 125 kilometre buffer our environmental variables are based on their mean value in that region, the number of ethnicities is the total number found within that buffer, and slave exports are the total exported from slaving ports falling within that buffer. In addition to the buffer method, we perform our analysis assigning each ethnicity to the nearest of the coastal points. Using each of these methods, we perform the following OLS regression:

$$E_i = \alpha + \beta_1 S_i + \gamma X_i + v_i$$

Where E_i is the number of ethnicities assigned to coastal point i , α is the intercept, S_i is the number of slave exports assigned to coastal point i , X_i is a vector of environmental covariates assigned to coastal point i , and v_i is an error term.

There is almost certainly some degree of reverse causation in the above specifications. If slaving was taboo within one's own ethnic group it would have been necessary for other ethnicities to be present nearby in order to capture slaves. In order to present a causal estimate of the impact of slaving on the development of ethnicity, we make use of the instruments developed by Nunn (2008a) which in this analysis are the distances between the coastal points and the nearest slave destination in the Americas or North Africa.⁵

The circular buffer zones overlap along the coast, but they have the virtue of encompassing much interior territory. To ensure the robustness of the results, we take steps to reduce overlap. We draw buffers around every other coastal point (resulting in 100 buffer zones) and every fourth (producing 50 buffer zones). We also perform our analysis on a set of buffer zones that are just tangent to each other, with no overlap. This produces 67, 40 and 19 zones respectively for the 125km, 250km and 500km buffers.

4.4 Results

In Table 1 we present results from several of the OLS and 2SLS regression specifications. The complete set of OLS and first and second stage 2SLS results for both of our ethnicity measures are available in the Appendix.

Columns 2 and 3 contain a subset of our OLS results, using both the Peoples Atlas and Murdock measures of ethnicity to generate our outcome variables. It is clear that there is a robust, positive relationship between slave exports and the number of ethnicities as defined by the Peoples Atlas. Among the controls, agricultural suitability and population are positively related to the number of ethnicities while elevation, forest, and desert cover are all negatively related to the number of ethnicities. The positive relationship between slave exports and ethnicity tends to persist using

⁵The American destinations are Virginia, Havana, Haiti, Kingston, Dominica, Guyana, Salvador, Rio de Janeiro, and the North African destinations are Algiers, Tunis, Tripoli, Benghazi, Cairo.

the Murdock (1959) measure, although it is a weaker relationship than with the Peoples Atlas. In general, the results are stronger the larger the buffer zone and the greater the number of observations.

Type	OLS	OLS	IV	IV	OLS	IV
P - 125km	0.015***	0.013***	0.038***	0.038**	0.008	0.026
P - 250km	0.041***	0.042***	0.123***	0.120***	0.036**	0.153**
P - 500km	0.160***	0.166***	0.342***	0.353***	0.141	0.315**
P- Nearest	0.025***	0.018***	0.059**	0.047***		
M - 125km	-0.0004	-0.0007	0.038***	0.038**		
M - 250km	0.003**	0.002	0.0006	0.002		
M- 500km	0.019***	0.021***	0.021***	0.024***		
M- Nearest	0.004***	0.003***	0.007	0.006***		
Obs	200	100	200	100	67,40,19	67,40,19

Table 4.1 The results presented in this table are calculated using OLS or 2SLS. The variables are constructed in a buffer around the coastal observation points as specified in the type column. The ‘P’ measure of ethnicity is constructed using the Peoples Atlas in Felix and Meur (2001) while the ‘M’ measure is constructed from Murdock (1959).

In columns 4 and 5, we display the coefficient on slave exports from our IV regressions. As in the OLS regressions, there exists a strong positive relationship between slave exports and the number of ethnicities in each region. The treatment effects are significantly larger in specifications using the Peoples Atlas and only slightly larger in specifications using Murdock’s mapping. The results from the first stage of the regressions are available in the online Appendix. The instrument is powerful and the strategy does not appear to suffer from a weak instruments problem.

The results are robust for all buffer sizes and numbers of observations for the Peoples Atlas. The Murdock results are generally robust, although weaker for smaller buffer zones. The results are robust to removing most observations from North Africa and South Africa. In columns 6 and 7, we present results using the Peoples Atlas where buffer zones are not allowed to overlap. As such, we have 67, 40, and 19 observations respectively. The downside to limiting the level of overlap is that we are unable to take advantage of much of the inland variation in ethnicity. These specifications provide results that are positive and are statistically significant in half of the specifications. The results are robust to performing the analysis at the country-level.

To get an idea of the size of the treatment effect, we multiply the coefficients by mean slave exports. The small buffer zone estimates, using the Peoples Atlas, indicate that the slave trade resulted in an average increase of 0.9 to 2.3 ethnicities in each of the 200 regions. This should be viewed as a lower bound on the treatment effect. The larger buffer zone estimates, using the Peoples Atlas, suggest an average local increase (over a much larger area) of 43.6 to 110.95 ethnicities. Since ethnicities overlap across buffer zones this overstates the treatment effect. This should be viewed as an upper bound on the treatment effect. For reference, the Peoples Atlas contains roughly 3700 ethnicities for all of Africa. It is difficult to determine a precise treatment effect, but it is clear that the effect is economically significant even at the lower bound.

4.5 A Model of War and Raiding

Given these large treatment effects, it is important to ask what exactly in the behaviour of people living in Africa or their states may have resulted in such a large increase in ethnicities as a result of the trade in human beings. To this end, we develop a simple model of village and state behaviour that hints at the dynamic that could be driving the empirical results. It is a simple model of cooperation and conflict between nations and villages. The model reveals the conditions under which the slave trade reduced the size of states and increased social and ethnic stratification.

The model is simple, but generates powerful results and insights. The players are the rulers of nations and villages who interact over an infinite time horizon in sequential play. We make this assumption because the slave trade lasted for centuries. Nations have the ability to attack villages to either conquer them or raid for slaves, but nations are unable to attack other nations. We define war as aggression for the purpose of acquiring people and territory (state-building). We define raiding as aggression for the purpose of acquiring people only (for the slave trade). Nations may decide to go to war, to raid or to do nothing. Villages may form defensive alliances against aggressive nations or offensive alliances, but there is a penalty for doing so. It reflects either the loss of independence or the cost of cooperating with outsiders. If a defensive alliance is formed the villages may not be attacked by a nation. If an offensive alliance is formed the alliance-villages may raid non-alliance villages. Villages may also choose to do nothing.

We assume that villages and nations are absolutist in the sense that the community leaders (elders, chiefs or kings) have the absolute authority to make decision for the people when it comes to war or raiding, and that this authority derives from the elite's claim to land, be it legitimized by oral history, lineage or religion.⁶ The assumption of absolutism has several important implications. First, decisions are made to maximize the elites' utility, not the people's utility. These are not democracies. Second, if the land of a village is captured in a war then the victor claims his right to the land by deposing of the elite. In other words, the chief is beheaded. Raiding is for bodies but war is for heads.

Finally, we assume diminishing returns to war and constant return to slave raiding, but the results hold so long as the returns to raiding decline slower than the returns to war. This is a reasonable assumption because the territory accumulated in war must be protected from outside aggressors. It must be policed and administered internally. Taxes must be collected. Communications networks and roads must be built and maintained. Rebellions in the outer provinces must be put down. The marginal cost of maintaining state territory obviously increases with the size of the territory.⁷

Raiding, on the other hand, is hit-and-run. There is no need to deploy an occupying force or construct infrastructure. Diminishing returns may set in as populations migrate to avoid raiders, or

⁶Again, the best description is offered by Equiano: "When a trader wants slaves, he applies to a chief for them, and tempts him with his wares. It is not extraordinary, if on this occasion he yields to the temptation with a little firmness, and accepts the price of his fellow creatures' liberty, with as little reluctance as the enlightened merchant. Accordingly he falls on his neighbor, and a desperate battle ensues." (Equiano, 1794)

⁷See Wilks (1975), chapters 1-4 for a discussion of the enormous effort to build and maintain the Great Roads of Asante, and the administrative and communication cost of ruling the Asante empire.

victims may adopt other defensive strategies.⁸ However, it is unlikely that traveling 50 miles further inland to raid for slaves adds more to the cost of acquiring surplus than does defending, integrating and administering a political outpost that is 50 miles further inland.

The complete assumptions for the model are listed in the Appendix. In the following three subsections we present the predictions generated by the model under different scenarios in the presence and absence international demand for slaves. The first scenario is the simplest and includes a single nation and a single village. In scenario two, we extend the first scenario to a single nation and many villages with a high alliance formation penalty. The third scenario includes a single nation and several villages with a low alliance formation penalty.

4.5.1 Scenario One: One Nation and One Village

In our first scenario, we consider the most basic possible situation in which international demand for slaves influences the behavior of an African state. In this scenario, there is a single nation and a single village which share a common border. We define the nation's labor force as L_n and the village's labor force as L_1 . We also define the nation's labor productivity as b_n and the village's labor productivity as b_1 . We have defined the ruler's utility function to be logarithmic in produced goods (where the value of produced goods in each region is labor productivity times the regional labor force) minus a fixed cost if aggressive action is undertaken (X is the cost of war, which is greater than S , the cost of slave raiding) plus an additional term paL_i if slaves are captured, which is revenue from slaves captured. Thus, the lifetime utility function if a nation does nothing in all periods, raids in all periods, or goes to war in the first period (and then does nothing) is as follows:

$$U(\text{Nothing}) = \frac{\log(b_n L_n)}{1 - \delta} \quad (4.1)$$

$$U(\text{Raiding}) = \frac{\log(b_n L_n) - R + paL_1}{1 - \delta} \quad (4.2)$$

$$U(\text{Conquest}) = \frac{\log(b_n L_n + b_1 L_1)}{1 - \delta} - X \quad (4.3)$$

In the absence of international demand for slaves, which we represent as a slave price equal to zero ($p = 0$)⁹ there exist two possible outcomes in equilibrium: the nation may either conquer the village in the first period or choose to take no aggressive action and simply produce goods. The nation will never choose to conquer the village after the first period because it faces the same payoff decision in each period. To determine whether the nation will choose to conquer the village

⁸See the collection of articles in Diouf (2003) for examples of defensive strategies including: relocating in swamps, abandoning villages, changing crops, changing architecture, building walls around cities and organizing local militia and defensive alliances among villages.

⁹Or, in other words, there is no external market for slaves. Thus, it may be appropriate to think of this model as before and after the beginning of the international slave trade. Instead of a starting slave price of zero, the results are identical if, in the absence of effective demand, $paL_1 < R$ and in its presence $paL_1 > R$

or simply produce, we compare the lifetime utility derived by the rulers of the nation in the two situations (conquering the village versus producing). The nation will choose to conquer the village if the lifetime utility obtained by conquest is greater than that obtained through production:

$$U(\text{Conquest}) \geq U(\text{Production})$$

$$\frac{\log(b_n L_n + b_1 L_1)}{1 - \delta} - X \geq \frac{\log(b_n L_n)}{1 - \delta}. \quad (4.4)$$

Thus, the nation will conquer the village if the one-time cost of conquest, which we define as X , is less than the discounted lifetime utility added through conquest (meaning that there is a net benefit to war):

$$X \leq \frac{\log(b_n L_n + b_1 L_1)}{1 - \delta} - \frac{\log(L_n)}{1 - \delta}. \quad (4.5)$$

As long as there is a net benefit to war, the nation will choose to conquer the village in the first period. This results in an increase in the size of the nation, as it incorporates the village. If the inequality does not hold (meaning that there is not a net benefit to war), the nation will do nothing and a peaceful equilibrium will be maintained.

If we introduce a positive price for slaves into the above scenario the equilibrium may be altered if there is a net benefit to slave raiding ($paL_1 \geq R$), meaning that the return to raiding is greater than the costs. If we start from a peaceful equilibrium any positive net benefit to slave raiding will generate a new slave raiding equilibrium. What does this change relative to the situation in the absence of international demand? First, it results in increased slave capture and the associated culture of terror. Second, it results in a permanent reallocation of labor from production to slave raiding. If we start from the conquest equilibrium, international demand for slaves will alter the equilibrium if the lifetime utility for the ruler is greater under slave raiding than under conquest, meaning that:

$$U(\text{Raiding}) \geq U(\text{Conquest})$$

$$\frac{\log(b_n L_n) - R + paL_1}{1 - \delta} \geq \frac{\log(b_n L_n + b_1 L_1)}{1 - \delta} - X. \quad (4.6)$$

If this inequality holds, the equilibrium will be altered such that the nation will choose to raid the village in each period.

Thus, for a sufficiently large value of paL_1 (the return to slave raiding) or sufficiently small values of R (the cost of slave raiding) the war equilibrium will be disrupted and replaced with a raiding equilibrium. What are the consequences? In addition to the effects previously noted in the perturbation of the peaceful equilibrium (labor reallocation and more slaves captured) there are implications for ethnicity and state size. The village and the nation both survive in equilibrium with

the nation being smaller than it was in the absence of effective demand. Since the village persists, this may be viewed as an increase in ethnic diversity in the long run.

4.5.2 Scenario Two: One Nation and Many Villages

The second scenario generalizes the first scenario to a situation with a large number of villages and a single nation. We assume that there are a total of N villages and a single nation. To keep the scenario simple, we assume that the penalty to forming an alliance (amongst the villages) is large enough to deter alliance formation. Additionally, we assume that the size of the labor force for both villages and the nation is equal to L and that regional labor productivity is equal to b . As in the first scenario, we assume that, in the absence of international demand for slaves, the price for slaves is zero. The utility functions for the nation and villages are characterized as they were previously.

In the absence of international demand, the nation will choose to conquer at least one village if the ruler's lifetime utility associated with the conquest of a village is greater than his utility when no villages are conquered. The nation, however, may conquer more than a single village, although we assume that it is only able to conquer one village each period. The nation will continue conquering villages until the marginal lifetime benefit of conquering another village is less than the one-time penalty associated with war (X). We may use this condition to define the total number of villages conquered (n) in equilibrium. The nation will conquer villages as long as the marginal benefit of conquest is greater than the marginal cost. The nation will continue conquering villages as long as the below inequality holds, where X is the marginal cost of conquering one more villages and the right term is the marginal benefit of conquering 1 more village (the benefit of conquering n villages - the benefit of conquering $n - 1$ villages):

$$X \leq \frac{\log(nbL)}{1 - \delta} - \frac{\log((n - 1)bL)}{1 - \delta} \quad (4.7)$$

Thus, the nation conquers n villages where n is the largest value such that the above inequality holds. Under optimizing behavior, the nation achieves a size of nL while the number of independent villages in equilibrium is reduced to $N - n$.

If we introduce international demand into the scenario the equilibrium condition will be altered. Assuming that N is a very large number (meaning that it is implausible for the nation to conquer all villages), the marginal condition now includes the opportunity cost of not raiding for the period in which the final village is conquered (meaning that had the nation chosen to not go to war it would have had the option to raid for slaves). Thus, the nation will now conquer villages as long as the marginal cost of war is less than the marginal benefit (this inequality closely mirrors the previous inequality):

$$X - R + paL \leq \frac{\log(nbL)}{1 - \delta} - \frac{\log((n - 1)bL)}{1 - \delta} \quad (4.8)$$

As before, the above condition determines the number of villages that are conquered in equilibrium, n . If there is a net benefit to raiding it is necessarily the case that the size of the nation will be smaller than in the absence of international demand: the left hand term is greater than it was before the slave trade arrived. The effects are similar to those presented in the first scenario. Nations will generally be smaller in equilibrium and greater ethnic diversity will persist. Again, there is a permanent reallocation of labor rather than a temporary one, as war occurred over a finite number of periods while raiding occurs indefinitely. Furthermore, if we imagine a continuum of nations playing this game, an increase in the price of slaves will produce more raiding. Thus, this simple model can generate an upward sloping supply curve.

As an extension, we may imagine this scenario with the villages and the nation located spatially along a line that runs from the African coast towards the interior. We may then contrast cases in which the nation is located (at the start of the game) either adjacent to the coast or deep within the interior. When a nation located along the coast conquers villages, it will be expanding towards the interior. When an interior nation conquers villages it pushes towards the coast. This scenario is interesting if we assume that prices vary by village according to their proximity to the coast, slave prices being higher the closer a village is to the coast. For example, if, in equilibrium, the nation raids a village near to the coast the return is higher than if it raids a village deep in the interior. For a nation in the interior, this pricing situation translates into a lower opportunity cost of war for any value of n (where n is the number of villages conquered) relative to a nation on the coast. This is true because the price of slaves for a village in the interior is lower than the price of slaves for a village near the coast. Additionally, the nation in the interior has an incentive to push towards the coast as it will result in a higher slave price when it decides to halt conquest and begin slave raiding. The coastal nation has the exact opposite incentives. Thus, the introduction of a price gradient discourages expansion for coastal nations and encourages expansion towards the coast for interior nations.

4.5.3 Scenario Three: One Nation and Three Villages with the Possibility of Alliances

In our third and final scenario, we suppose that we are in a situation with a single nation and three villages arranged along a line with the nation at one end. We again assume that the nation and all villages have the same population L and regional labor productivity b . Unlike scenario two, we assume that the penalty for alliance formation is not so large that it necessarily rules out alliance formation. Thus, we will need to examine villages' alliance decisions.

We start by assuming that, in the absence of international demand, the parameters of the model are such that the nation will conquer all three villages. In other words, the utility increase from conquering the third village must be greater than the conquest penalty. Thus, all three villages are conquered if the marginal benefit of conquest is greater than the marginal cost:

$$X \leq \frac{\log(4bL)}{1-\delta} - \frac{\log(3bL)}{1-\delta} \quad (4.9)$$

As long as this inequality holds, the nation will conquer all three villages. However, it is possible that the villages may choose to voluntarily form an alliance. In order to determine whether this occurs, we must compare the utility of the village rulers if they are conquered with their utility if they form a defensive alliance. If no villages form an alliance and they are all conquered, the rulers of the villages will have utility as follows, where village 1 is the village next to the nation, village 2 is next on the line, followed by village 3:

$$U_1 = 0 \quad (4.10)$$

$$U_2 = \log(bL) \quad (4.11)$$

$$U_3 = \log(bL) + \delta \log(bL) = (1 + \delta)\log(bL) \quad (4.12)$$

Since the nation is only able to conquer a single village in each period, the third village is in the “best” situation of the three. The only possibility for alliance formation is a joining of villages two and three, as we assume that the nation gets to play first in the sequential game. Since village three has a higher utility if no alliance is formed, the binding constraint for alliance formation falls on village three.

Village three will voluntarily enter into an alliance with village two if the utility from the alliance is greater than remaining independent and being conquered. Thus, villages two and three form an alliance if the discounted continuous utility stream provided by survival is greater than the utility from independence and being conquered:

$$\frac{\log(bL) - \varepsilon}{1-\delta} \geq (1 + \delta)\log(bL) \quad (4.13)$$

If the alliance penalty is greater than $\delta^2 \log(bL)$ village three will not enter into an alliance with village two, resulting in an equilibrium in which the nation conquers all three villages.

If we assume that the alliance penalty is indeed large enough to prevent alliance formation the introduction of international demand will alter the equilibrium outcome in a particular manner. With a positive slave price, the nation only desires to conquer all three villages if the persistent value of conquering the first and the second villages is greater than the opportunity cost (not raiding for slaves in each period) of war and the value to conquering the third village is greater than the value of raiding the third village for all remaining periods. This reduces to the second scenario in which there is less conquest, greater ethnic diversity, a permanent reallocation of labor, and more slaves produced.

If the penalty for alliance formation is sufficiently low villages two and three may choose to form an alliance in the presence of international demand. If we assume that the parameters of

the model are such that the nation conquers village one (in the event that villages two and three ally) villages two and three will form an alliance if the utility to allying for village three is greater than remaining independent (but being raided forever). This may be expressed as the following inequality:

$$\frac{\log(bL) - S}{1 - \delta} \leq \frac{\log(bL) - \varepsilon}{1 - \delta} \quad (4.14)$$

Thus, it is apparent that our equilibrium condition for alliance formation is different than it was in the absence of international demand. If we imagine a certain distribution over values of S , it is now more likely that village three will not make an offer of alliance to village two. This is a result of our assumption of an absolutist state governed in the sole interests of the nation's (or village's) ruler. The logic is that the ruling elite in village three will maintain their status while their village is raided, but would lose that status (and perhaps their lives) if conquered. Thus, in this scenario, the introduction of effective demand decreases state size, as village three is not conquered and results in a long term reallocation of labor from productive purposes towards raiding. Ethnic diversity is also greater and persists.¹⁰

All three scenarios suggest several stylized facts. International demand for slaves (or an increase in slave prices) should produce smaller states with more slave raiding, greater ethnic diversity and more alliances for the purpose of raiding. International demand (or price increases) should also result in fewer defensive alliances and decreased production. Increases in the productivity of labor

¹⁰Finally, in a permutation of scenario three, we may consider another possible equilibrium in which villages two and three form an alliance (and the nation does not conquer village one) in order to raid the remaining village. This occurs if the value of conquest (of village one) for the nation is less than the value of raiding that village forever:

$$\frac{\log(bL) + paL - R}{1 - \delta} \geq \frac{\log(2bL)}{1 - \delta} - X \quad (4.15)$$

The necessary constraint on villages 2 and 3 to form an alliance is altered such that they will only form an alliance if the benefit to allying (and then subsequently raiding village 1) is greater than remaining independent:

$$\frac{\log(L) - \varepsilon - R + paL}{1 - \delta} \geq \frac{\log(L)}{1 - \delta} \quad (4.16)$$

Additionally, it must be the case that they do not wish to conquer village one. They do not conquer village one if the utility provided by raiding village one forever is greater than conquering the village and then doing nothing for all future periods:

$$\frac{\log(L) - \varepsilon - R + paL}{1 - \delta} \geq \frac{\log(1.5L) - \varepsilon}{1 - \delta} - X \quad (4.17)$$

If these inequalities hold we have an equilibrium in which the nation raids village one, and villages two and three form an alliance which in turn raids village one. This outcome is more likely to occur for larger values of p and, as such, helps generate an upward sloping supply curve. In addition, it generates greater ethnic diversity and smaller states. Again, there is a significant reallocation of labor from productive purposes.

should increase state building (and as such, decrease raiding and ethnic diversity).

The model and the three scenarios clearly present a plausible explanation for the empirical results in which international demand for slaves may have fundamentally altered the behaviour of African states and villages. It may have discouraged nation building and, rather resulted in a drastic increase in the number of autonomous states and villages over time. If we believe that distinct ethnicities, one conquered will tend to merge with other ethnicities in the same political unit, this effect would then lead to an increase in ethnicity over time. This is not to say that the effect could not be driven by other mechanisms. For example, we know that the slave trade had permanent impacts on trust and mistrust. This may have discouraged cultures from growing together over time perhaps as a result of less co-mingling.

4.6 Conclusion

We have argued that the slave trade increased the number of ethnic groupings in present-day Africa. We do not claim to understand the mechanism with certainty, although we believe that the slave trade likely fundamentally altered the behaviour of states in a manner that constrained the geographic scope of political authority. This effect likely played in tandem with growing mistrust and increased incentives to distinguish insider from outsider. Our regressions identify a positive and statistically significant relationship between the number of slaves leaving the west coast of Africa and the limited geographic scope of twentieth century ethnic groupings. This relationship is robust to changes in the scheme for drawing ethnic boundaries, to the choice of observational unit, and to the inclusion of a variety of variables thought to influence the geographic scope of ethnic groupings. Our IV estimates produce support for the view that causality runs from slaving to ethnic diversity. We believe this finding has broad implications for research in the economic history of Africa.

Nunn and Wantchekon (2011) find that the intensity of slave capturing and marketing in the past helps explain spatial and individual variation in the level of mistrust among Africans today. Coupled with the evidence on ethnic conflict, one might expect mistrust to be one of the many social manifestations of the kind of heightened ethnic identity that we find correlated with the slave trade.

At the most general level, our findings endogenize some of the ethnic diversity that characterizes contemporary Africa. Rather than view the salience of ethnic identity in Africa as something primordial, traditional, or even primitive, this paper presents evidence that it is the exact opposite – a legacy of the role and position of Africa in the creation of our modern world. At the same time, it is consistent with the view that ethnic diversity has roots in Africa that run deeper than the colonial experience. This may help explain why colonial powers often chose indirect rule and the strengthening of “traditional” authority. The plethora of moral ethnicities surviving the slave trade may have constrained the importation of European institutions. Daron Acemoglu and Robinson (2001) might see this as a reversal of fortune.¹¹ In this case, the extractive institution is organized slave raiding, which Nunn (2008a) argues is not conducive to long-run growth. What we add to this

¹¹See Daron Acemoglu and Robinson (2005) for further context.

line of thinking is a lock-in mechanism – ethnic diversity – which locks-out the importation of an alternative set of institutions that may have been more favorable to long-run growth (Lange, 2004), while locking-in the beneficiaries of slave raiding.

4.7 Appendix: Tables

Felix & Meur (2001) - Number of Ethnicities in 125km Buffers

	(1)	(2)	(3)	(4)	(5)	(6)	IV (7)	IV (8)	IV (9)
Slaves	.021 (.004)***	.020 (.005)***	.022 (.007)***	.015 (.003)***	.013 (.005)***	.014 (.007)**	.038 (.012)***	.038 (.017)**	.041 (.026)
AgSuitability				3.647 (.653)***	3.541 (.900)***	3.335 (1.311)**	3.431 (.737)***	3.325 (1.037)***	3.681 (1.546)**
Population				.076 (.026)***	.066 (.034)*	.080 (.041)*	.056 (.031)*	.046 (.041)	.077 (.048)
Elevation				-.087 (.115)	-.194 (.166)	-.548 (.254)**	.080 (.153)	.004 (.230)	-.346 (.348)
Forest				-7.444 (5.355)	-5.744 (7.178)	-7.499 (10.893)	-7.741 (5.984)	-3.860 (8.283)	-12.427 (13.382)
Desert				-15.247 (2.351)***	-15.238 (3.372)***	-13.652 (4.932)***	-12.314 (3.010)***	-11.954 (4.420)***	-11.439 (6.053)*
Obs.	200	100	50	200	100	50	200	100	50

Table 4.2 The results presented in this table are calculated using OLS or 2SLS, as marked. The variables are constructed in a 125km buffer around each of the coastal points. Specifications include totals of: 50, 100, and 200 total points. The measure of ethnicity is constructed using Felix and Meur (2001).

Felix & Meur (2001) - Number of Ethnicities in 250km Buffers

	(1)	(2)	(3)	(4)	(5)	(6)	IV (7)	IV (8)	IV (9)
Slaves	.072 (.008)***	.072 (.011)***	.078 (.017)***	.041 (.007)***	.042 (.010)***	.028 (.015)*	.123 (.028)***	.120 (.035)***	.141 (.061)**
AgSuitability				10.387 (1.937)***	9.939 (2.710)***	7.871 (3.993)**	6.436 (2.806)**	6.310 (3.785)*	356 (7.062)
Population				.885 (.100)***	.909 (.154)***	1.209 (.221)***	.680 (.145)***	.631 (.228)***	.838 (.379)**
Elevation				-.800 (.267)***	-.799 (.386)**	-1.067 (.525)**	-.165 (.401)	-.073 (.580)	.103 (.979)
Forest				-12.314 (6.793)*	-6.817 (9.282)	5.105 (14.779)	-25.222 (9.706)**	-19.858 (13.071)	3.351 (22.531)
Desert				-17.295 (3.432)***	-15.296 (4.402)***	-14.335 (8.285)*	-5.867 (5.767)	-5.739 (6.905)	4.425 (15.554)
Obs.	200	100	50	200	100	50	200	100	50

Table 4.3 The results presented in this table are calculated using OLS or 2SLS, as marked. The variables are constructed in a 250km buffer around each of the coastal points. Specifications include totals of: 50, 100, and 200 total points. The measure of ethnicity is constructed using Felix and Meur (2001).

Felix & Meur (2001) - Number of Ethnicities in 500km Buffers

	(1)	(2)	(3)	(4)	(5)	(6)	IV (7)	IV (8)	IV (9)
Slaves	.169 (.012)***	.173 (.018)***	.179 (.026)***	.160 (.015)***	.166 (.021)***	.170 (.036)***	.342 (.053)***	.353 (.074)***	.407 (.207)**
AgSuitability				3.205 (5.724)	-2.238 (7.580)	1.948 (14.707)	-20.801 (9.983)*	-20.906 (12.388)*	-39.345 (40.693)
Population				4.369 (.488)**	4.612 (.688)**	4.850 (1.265)**	3.419 (.699)**	3.462 (1.027)**	4.602 (1.804)**
Elevation				-.338 (.836)	-.022 (1.173)	-.170 (1.767)	2.830 (1.401)**	2.947 (1.934)	3.315 (3.869)
Forest				-53.943 (10.754)***	-43.352 (14.784)***	-61.010 (24.603)**	-119.394 (22.658)***	-114.883 (33.058)***	-124.344 (63.946)**
Desert				-10.985 (4.043)***	-5.510 (4.542)	-16.737 (13.956)	12.465 (8.281)	12.459 (9.036)	33.437 (46.850)
Obs.	200	100	50	200	100	50	200	100	50

Table 4.4 The results presented in this table are calculated using OLS or 2SLS, as marked. The variables are constructed in a 500km buffer around each of the coastal points. Specifications include totals of: 50, 100, and 200 total points. The measure of ethnicity is constructed using Felix and Meur (2001).

Felix & Meur (2001) - Number of Ethnicities (Assigned to Nearest Coastal Point)

	(1)	(2)	(3)	(4)	(5)	(6)	IV (7)	IV (8)	IV (9)
Slaves	.028 (.007)***	.019 (.003)***	.024 (.006)***	.025 (.010)**	.018 (.005)***	.009 (.008)	.059 (.028)**	.047 (.015)***	.068 (.050)
AgSuitability				3.674 (3.889)	437 (1.733)	6.903 (3.422)**	-792 (5.233)	-2.534 (2.473)	-3.456 (9.847)
Population				.560 (.331)*	.537 (.157)***	1.026 (.294)***	.383 (.366)	.354 (.205)*	.963 (.436)**
Elevation				.054 (.568)	.126 (.268)	-.204 (.411)	.644 (.734)	.599 (.386)	.671 (.936)
Forest				-8.257 (7.306)	-.749 (3.381)	-7.815 (5.725)	-20.431 (11.877)*	-12.134 (6.600)*	-23.704 (15.474)
Desert				-2.688 (2.747)	.416 (1.039)	-7.952 (3.248)**	1.674 (4.341)	3.275 (1.804)*	4.636 (11.337)
Obs.	200	100	50	200	100	50	200	100	50

Table 4.5 The results presented in this table are calculated using OLS or 2SLS, as marked. The environmental variables are constructed in a 500km buffer around each of the coastal points. Ethnicities are only assigned to the nearest coastal point. Specifications include totals of: 50, 100, and 200 total points. The measure of ethnicity is constructed using Felix and Meur (2001).

Murdock (1959) - Number of Ethnicities in 125km Buffers

	(1)	(2)	(3)	(4)	(5)	(6)	IV (7)	IV (8)	IV (9)
Slaves	.001 (.0007)*	.001 (.001)	.002 (.001)	-.0004 (.0006)	-.0007 (.001)	-.0002 (.001)	-.001 (.002)	-.001 (.003)	-.0009 (.005)
AgSuitability				.452 (.127)***	.595 (.189)***	.463 (.267)*	.457 (.128)***	.600 (.191)***	.454 (.274)*
Population				.009 (.005)*	.012 (.007)*	.015 (.008)*	.009 (.005)*	.013 (.008)*	.016 (.008)*
Elevation				-.049 (.022)**	-.079 (.035)**	-.077 (.052)	-.053 (.027)**	-.083 (.042)*	-.083 (.062)
Forest				1.891 (1.041)*	1.470 (1.503)	.040 (2.218)	1.898 (1.043)*	1.430 (1.323)	1.73 (2.370)
Desert				-2.485 (.457)***	-2.883 (.706)***	-2.496 (1.004)*	-2.558 (.525)***	-2.952 (.813)***	-2.556 (1.072)**
Obs.	200	100	50	200	100	50	200	100	50

Table 4.6 The results presented in this table are calculated using OLS or 2SLS, as marked. The variables are constructed in a 125km buffer around each of the coastal points. Specifications include totals of: 50, 100, and 200 total points. The measure of ethnicity is constructed using Murdock (1959).

Murdock (1959) - Number of Ethnicities in 250km Buffers

	(1)	(2)	(3)	(4)	(5)	(6)	IV (7)	IV (8)	IV (9)
Slaves	.009 (.001)***	.009 (.002)***	.009 (.003)***	.003 (.001)**	.002 (.002)	-.0008 (.002)	.0006 (.003)	.002 (.004)	-.003 (.006)
AgSuitability				1.809 (.286)**	1.780 (.417)**	2.132 (.592)**	1.904 (.325)**	1.822 (.456)**	2.258 (.705)**
Population				.127 (.015)***	.128 (.024)***	.147 (.033)***	.132 (.017)***	.132 (.028)***	.154 (.038)***
Elevation				-.182 (.039)***	-.192 (.060)***	-.253 (.078)***	-.197 (.046)***	-.201 (.070)***	-.272 (.098)***
Forest				-1.685 (1.004)	1.73 (1.430)	1.182 (2.193)	-1.374 (1.122)	1.324 (1.576)	1.324 (2.250)
Desert				-3.363 (.507)***	-3.107 (.678)***	-4.068 (1.229)***	-3.639 (.667)***	-3.218 (.832)***	-4.384 (1.553)***
Obs.	200	100	50	200	100	50	200	100	50

Table 4.7 The results presented in this table are calculated using OLS or 2SLS, as marked. The variables are constructed in a 250km buffer around each of the coastal points. Specifications include totals of: 50, 100, and 200 total points. The measure of ethnicity is constructed using Murdock (1959).

Murdock (1959) - Number of Ethnicities in 500km Buffers

	(1)	(2)	(3)	(4)	(5)	(6)	IV (7)	IV (8)	IV (9)
Slaves	.021 (.002)***	.022 (.003)***	.023 (.004)***	.019 (.002)***	.021 (.003)***	.019 (.005)***	.021 (.006)***	.024 (.009)***	.0002 (.025)
AgSuitability				2.230 (.898)*	1.164 (1.209)	3.412 (2.242)	2.011 (1.176)*	.833 (1.457)	6.679 (4.938)
Population				.748 (.077)***	.768 (.110)***	.782 (.193)***	.739 (.082)***	.747 (.121)***	.801 (.219)***
Elevation				-.473 (.131)***	-.373 (.187)**	-.479 (.269)*	-.444 (.165)***	-.321 (.227)	-.755 (.469)
Forest				-10.703 (1.687)***	-8.867 (2.357)***	-12.918 (3.750)***	-11.301 (2.669)***	-10.133 (3.889)***	-7.907 (7.759)
Desert				-2.555 (.634)***	-1.460 (.724)**	-4.845 (2.127)**	-2.340 (.976)**	-1.142 (1.063)	-8.815 (5.685)
Obs.	200	100	50	200	100	50	200	100	50

Table 4.8 The results presented in this table are calculated using OLS or 2SLS, as marked. The variables are constructed in a 500km buffer around each of the coastal points. Specifications include totals of: 50, 100, and 200 total points. The measure of ethnicity is constructed using Murdock (1959).

Murdock (1959) - Number of Ethnicities (Assigned to Nearest Coastal Point)

	(1)	(2)	(3)	(4)	(5)	(6)	IV (7)	IV (8)	IV (9)
Slaves	.004 (.001)***	.002 (.0006)***	.003 (.0009)***	.004 (.002)**	.003 (.0008)***	.002 (.001)*	.007 (.005)	.006 (.002)***	.010 (.007)
AgSuitability				.597 (.666)	-.176 (.292)	.801 (.484)*	.156 (.879)	-.491 (.377)	-.621 (1.370)
Population				.101 (.057)*	.076 (.026)***	.150 (.042)***	.083 (.082)	.057 (.031)*	.142 (.061)**
Elevation				-.019 (.097)	.017 (.045)	-.042 (.058)	.039 (.123)	.067 (.059)	.079 (.130)
Forest				-1.803 (1.251)	-.142 (.569)	-1.939 (.809)**	-3.006 (1.996)	-1.346 (1.007)	-4.121* (2.154)*
Desert				-.272 (.470)	.435 (.175)**	-.747 (.459)	.159 (.729)	.737 (.275)***	.982 (1.578)
Obs.	200	100	50	200	100	50	200	100	50

Table 4.9 The results presented in this table are calculated using OLS or 2SLS, as marked. The environmental variables are constructed in a 500km buffer around each of the coastal points. Ethnicities are only assigned to the nearest coastal point. Specifications include totals of: 50, 100, and 200 total points. The measure of ethnicity is constructed using Murdock (1959).

IV First Stage - Number of Slaves Exported in 125km Buffers

	(1)	(2)	(3)
Instrument1	-2.788 (1.725)	-2.663 (2.520)	-1.829 (3.442)
Instrument2	-3.059 (.687)**	-3.071 (.992)**	-2.709 (1.303)**
AgSuitability	-6.889 (15.199)	-5.125 (21.453)	-26.137 (30.270)
Population	2.010 (.590)**	1.967 (.819)**	.845 (.933)
Elevation	-7.645 (2.803)**	-8.758 (4.223)*	-8.334 (6.499)
Forest	75.342 (112.346)	-32.831 (154.868)	200.407 (227.701)
Desert	-50.328 (50.972)	-59.929 (74.878)	-23.442 (106.040)
Obs.	200	100	50

Table 4.10 The results presented in this table are the first stage results for all 125km buffer IV regressions. The environmental variables are constructed in a 125km buffer around each of the coastal points. Ethnicities are only assigned to the nearest coastal point. Specifications include totals of: 50, 100, and 200 total points.

IV First Stage - Number of Slaves Exported in 250km Buffers

	(1)	(2)	(3)
Instrument1	-7.978 (2.467)**	-6.069 (3.673)*	-4.445 (5.012)
Instrument2	-5.732 (.983)**	-5.572 (1.446)**	-5.311 (1.897)**
AgSuitability	-1.705 (21.733)	15.587 (31.266)	4.974 (44.073)
Population	3.528 (.843)**	3.270 (1.194)**	2.504 (1.359)*
Elevation	-5.533 (4.008)	-11.111 (6.155)*	-13.155 (9.462)
Forest	-77.796 (160.641)	-144.491 (225.710)	153.784 (331.526)
Desert	-221.454 (72.884)**	-245.996 (109.130)**	-187.540 (154.392)
Obs.	200	100	50

Table 4.11 The results presented in this table are the first stage results for all 250km buffer IV regressions. The environmental variables are constructed in a 250km buffer around each of the coastal points. Ethnicities are only assigned to the nearest coastal point. Specifications include totals of: 50, 100, and 200 total points.

IV First Stage - Number of Slaves Exported in 500km Buffers

	(1)	(2)	(3)
Instrument1	-12.083 (3.888)***	-11.677 (5.648)**	-9.406 (7.790)
Instrument2	-10.456 (1.549)**	-9.980 (2.223)**	-9.445 (2.949)**
AgSuitability	21.612 (34.257)	26.981 (48.073)	9.094 (68.496)
Population	4.489 (1.329)***	3.994 (1.836)**	2.232 (2.112)
Elevation	-15.972 (6.318)*	-17.897 (9.464)*	-17.078 (14.706)
Forest	793.657 (253.206)***	566.340 (347.034)	1130.057 (515.249)**
Desert	-415.753 (114.880)***	-442.172 (167.791)***	-422.868 (239.951)*
Obs.	200	100	50

Table 4.12 The results presented in this table are the first stage results for all 500km buffer and “nearest” IV regressions. The environmental variables are constructed in a 125km buffer around each of the coastal points. Ethnicities are only assigned to the nearest coastal point. Specifications include totals of: 50, 100, and 200 total points.

Peoples Atlas - Number of Ethnicities in 125km Buffers - No Overlap

	(1)	(2)	IV (3)
Slaves	.013** (.006)**	.008 (.006)	.026 (.019)
AgSuitability		1.281*** (1.032)***	1.253*** (1.127)***
Population		.096** (.040)**	.107** (.045)**
Elevation		.449* (.234)*	.316 (.288)
Forest		4.303 (9.209)	2.454 (10.168)
Desert		15.742*** (4.065)***	12.428** (5.554)**
Obs.	67	67	67

Table 4.13 The results presented in this table are calculated using OLS or 2SLS, as marked. The variables are constructed in a 125km buffer around each of the coastal points. The observation size has been chosen to ensure no overlap between observational units. The measure of ethnicity is constructed using Felix and Meur (2001).

Peoples Atlas - Number of Ethnicities in 250km Buffers - No Overlap

	(1)	(2)	IV (3)
Slaves	.089*** (.019)***	.036** (.016)**	.153** (.064)**
AgSuitability		11.786*** (3.913)***	8.504 (6.468)
Population		1.263*** (.209)***	.795 (.436)
Elevation		1.322** (.541)**	.084 (1.065)
Forest		15.750 (15.126)	32.280 (25.562)
Desert		17.046** (7.437)**	6.729 (12.967)
Obs.	40	40	40

Table 4.14 The results presented in this table are calculated using OLS or 2SLS, as marked. The variables are constructed in a 250km buffer around each of the coastal points. The observation size has been chosen to ensure no overlap between observational units. The measure of ethnicity is constructed using Felix and Meur (2001).

Peoples Atlas - Number of Ethnicities in 500km Buffers - No Overlap

	(1)	(2)	IV (3)
Slaves	173 (.053)***	141 (.088)	315 (.151)**
AgSuitability		5.408 (25.038)	-13.594 (31.345)
Population		7.279 (4.185)*	3.723 (5.340)
Elevation		645 (4.513)	5.014 (5.915)
Forest		-34.446 (84.054)	-142.156 (119.218)
Desert		-4.059 (10.568)	7.342 (14.227)
Obs.	19	19	19

Table 4.15 The results presented in this table are calculated using OLS or 2SLS, as marked. The variables are constructed in a 500km buffer around each of the coastal points. The observation size has been chosen to ensure no overlap between observational units. The measure of ethnicity is constructed using Felix and Meur (2001).

4.8 Appendix: Model

1. The game has an infinite number of periods and is played sequentially.
2. Each nation and village is located on an ordered line.
3. A nation may choose to do nothing, to raid a neighbouring village, or conquer a neighbouring village. A village may choose to do nothing or form an alliance with another village.
4. The actual player is the king or chieftain of the nation or village. Payoffs reflect the utility stream of the king or chieftain.
5. The pre-existing nation always moves first, followed by the villages. If we assume that the nation is located on the far left of the ordered line then play proceeds from left to right along the line.
6. The discount rate is equal to δ .
7. Each nation and village has a labor force equal to L_i , which also defines the size of the nation.
8. Each nation and village has a level of labor productivity equal to b_i .
9. The labor force may be used in production, raiding, or warfare. This reallocation is modeled abstractly through the cost of raiding or war.
10. Raiding results in a cost of R , which encompasses reallocated labor and military losses.
11. Warfare requires X , which encompasses reallocated labor and military losses.
12. Raiding results in a one period payoff equal to paL_i where p is the price of slaves and a is the fraction of the village's population enslaved.
13. If a village is conquered utility stream of its chieftain is 0 for all future periods.
14. The chieftain of a raided nation is subject to a one period utility penalty equal to S .
15. Conquest results in the conquered nations labor force being added to the conquerors.
16. If two villages choose to ally each chieftain will maintain a separate payoff stream and split any rewards from conquest or raiding.
17. Raiding, conquest, and alliance formation may only occur between neighboring villages or nations.
18. A nation is able to raid a village, but is unable to raid other nations.
19. Two villages may choose to join together and form an alliance with each taking a penalty equal to ε .
20. An alliance between two villages is equivalent to them forming a nation. Once allied, these villages may conquer or raid villages. Additionally, they may not be conquered by a nation.

The above framework is not ideal for presenting a single all-encompassing description for the effect of the introduction of the slave trade. Rather, we present three scenarios based upon different initial conditions and explore the impact of the introduction of the slave trade.

Bibliography

- Acemoglu, Simon Johnson Daron and James Robinson**, “The Colonial Origins of Comparative Development: An Empirical Investigation,” *The American Economic Review*, 2001, 91 (5), 1369–1401.
- **and** — , “The Rise of Europe: Atlantic Trade, Institutional Change, and Economic Growth,” *The American Economic Review*, 2005, 95 (3), 546–579.
- Almond, Douglas, Hilary W. Hoynes, and Diane Whitmore Schanzenbach**, “Inside the War on Poverty: The Impact of Food Stamps on Birth Outcomes,” *The Review of Economics and Statistics*, 2011, 93 (2), 387–403.
- Andrews, Kenneth T.**, “Social Movements and Policy Implementation: The Mississippi Civil Rights Movement and the War on Poverty, 1965-1971,” *American Sociological Review*, 2001, 66, 71–95.
- Atack, Jeremy and Peter Passell**, *A New Economic View of American History*, New York, NY: W. W. Norton, 1994.
- Bailey, Martha J.**, “Reexamining the Impact of Family Planning Programs on U.S. Fertility: Evidence from the War on Poverty and Early Years of Title X,” *American Economic Journal: Applied Economics*, 2012, 4 (2), 62–97.
- **and Nicolas J. Duquette**, “How Johnson Fought the War on Poverty: The Politics and Economics of Funding at the Office of Economic Opportunity,” *The Journal of Economic History*, 2014, 74 (2), 351–399.
- **and Sheldin Danzinger**, *Legacies of the War on Poverty*, Russell Sage Foundation, 2013.
- Bain, George and Farouk Elsheikh**, *Union Growth and the Business Cycle: An Econometric Analysis*, Oxford: Basil Blackwell, 1976.
- **and Robert Price**, *Profiles of Union Growth: A Comparative Statistical Portrait of Eight Countries*, Oxford: Basil Blackwell, 1980.
- Baron, James N., Frank R. Dobbin, and P. Devereaux Jennings**, “War and Peace: The Evolution of Modern Personnel Administration in US Industry,” *American Journal of Sociology*, 1984, 92 (2), 350–383.

- Bates, Robert H.**, *When Things Fell Apart: State Failure in Late-Century Africa*, New York, NY: Cambridge University Press, 2008.
- Bauman, Robert**, *Race and the War on Poverty: from Watts to East L.A.*, Norman, OK: University of Oklahoma Press, 2008.
- Belkin, Douglas and Kris Maher**, “Wisconsin Unions See Ranks Drop Ahead of Recall Vote,” *The Wall Street Journal*.
- Berkowitz, Leonard**, “The Study of Urban Violence: Some Implications of Laboratory Studies of Frustration and Aggression,” *American Behavioral Scientist*, 1968, 11 (4), 14–17.
- Bohlken, Anjali T. and Ernest J. Sergenti**, “Economic Growth and Ethnic Violence: An Empirical Investigation of Hindu-Muslim Riots in India,” *The Journal of Peace Research*, 2010, 47 (5), 589–600.
- Borland, Jeff and Sam Ouliaris**, “The Determinants of Australian Trade Union Membership,” *Journal of Applied Econometrics*, 1994, 9 (4), 453–469.
- Boubacar, Barry**, *Senegambia and the Atlantic Slave Trade*, Cambridge, GB: Translated by Ayi Kwei Armah. Cambridge University Press, 1998.
- Boustan, Leah Platt**, “Was Postwar Suburbanization ‘White Flight’? Evidence from the Black Migration,” *Quarterly Journal of Economics*, February 2010, 125 (1), 417–443.
- Brady, David, Regina Baker, and Ryan Finnegan**, “When Unionization Disappears: State-Level Unionization and Working Poverty in the U.S.,” *American Sociological Review*, 2013, 78 (5), 872–896.
- Brass, Paul R.**, *The Production of Hindu-Muslim violence in Contemporary India*, Seattle, WA: University of Washington Press, 2003.
- Brauer, Carl M.**, “Kennedy, Johnson, and the War on Poverty,” *Journal of American History*, 1982, 69 (1), 98–119.
- Brody, David**, *Workers in Industrial America: Essays on the Twentieth-Century Struggle*, New York: Oxford University Press, 1985.
- Card, David, Thomas Lemieux, and Craig Riddell**, “Unions and Wage Inequality,” *Journal of Labor Research*, 2004, 25 (4), 519–559.
- Carter, Gregg Lee**, “The 1960s Black Riots Revisited: City Level Explanations of Their Severity,” *Sociological Inquiry*, 1986, 56 (2), 210–228.
- , “Local Police Force Size and the Severity of the 1960s Black Rioting,” *Journal of Conflict Resolution*, 1987, 31 (4), 601–614.
- Cazenave, Noel A.**, *Impossible Democracy: The Unlikely Success of the War on Poverty Community Action Programs*, State University of New York Press, 2007.

- Chandra, Siddharth and Angela W. Foster**, “The Revolution of Rising Expectations, Relative Deprivation, and the Urban Social Disorders of the 1960s: Evidence from State-Level Data,” *Social Science History*, 2005, 29 (2), 299–332.
- Chaturvedi, A. and A. Mukherji**, “Do Elections Incite Violence?,” SSRN Working Paper Series 818345 2005.
- Chicago Riot Study Committee**, “Report of the Chicago Riot Study Committee to the Hon. Richard J. Daley,” Chicago, IL 1968.
- Chrysanthou, Georgios M.**, “Determinants of Trade Union Membership in Great Britain During 1991-2003,” *in mimeo*, 2007.
- Clark, Kenneth B. and Jeannette Hopkins**, *A Relevant War Against Poverty; A Study of Community Action Programs and Observable Social Change*, New York, NY: Harper Row, 1969.
- Collier, Paul**, “The Political Economy of Ethnicity,” in B. Preskovic and J.E. Stigletz, eds., *Annual World Bank Conference on Development Economics*, Washington, D.C.: The World Bank, 1998.
- Collins, William J. and Fred H. Smith**, “A Neighborhood-Level View of Riots, Property Values, and Population Loss: Cleveland 1950-1980,” *Explorations in Economic History*, July 2007, 44 (3), 365–386.
- **and Robert A. Margo**, “The Labor Market Effects of the 1960s Riots,” Working Paper 10243, National Bureau of Economic Research January 2004.
- **and —**, “The Economic Aftermath of the 1960s Riots in American Cities: Evidence from Property Values,” *Journal of Economic History*, December 2007, 67 (4), 849–883.
Community Action Partnership
- Community Action Partnership**, April 2010. <http://www.communityactionpartnership.com/>.
- Cook, Fred J.**, “Newark’s ‘responsible militants’ say: ‘It’s Our City, Don’t Destroy It’,” *New York Times*, 1968.
- Cornford., Daniel A and Sally M. Miller**, *American Labor in the Era of World War II*, Westport, CT: Greenwood Pres, 1995.
- Cragg, John G.**, “Some Statistical Models for Limited Dependent Variables with Application to the Demand for Durable Goods,” *Econometrica*, 1971, 39 (5).
- Curtin, Philip D.**, *Economic Change in Precolonial Africa: Senegambia in the Era of the Slave Trade*, Madison, WI: University of Wisconsin Press, 1975.
- Darity, William**, “A General Equilibrium Model of the Eighteenth Century Atlantic Slave Trade,” *Research in Economic History*, 1982, 7 (1), 287–326.
- Davidson, Basil**, *Black Mother*, Boston, MA: Penguin Books, 1961.
- , *Africa in History*, London, GB: Simon Schuster, 1968.

- Davies, K. G.**, *The Royal African Company*, New York, NY: Octagon Books, 1975.
- Davis, Donald R. and David E. Weinstein**, “Bones, Bombs and Break Points: The Geography of Economic Activity,” *American Economic Review*, 2001, 92 (5), 1269–1289.
- DeBarros, Philip L.**, “The Effects of the Slave Trade on the Bassar Ironworking Society, Togo,” in Christopher R. Decorse, ed., *In West Africa During the Atlantic Slave Trade*, London, UK: Leicester University Press, 2001.
- Deerr, Noel**, *The History of Sugar: Volume 2*, London, UK: Chapman and Hall, 1950.
- DiNardo, John and David S. Lee**, “Economic Impacts of New Unionization on Private Sector Employers: 1984-2001,” *Quarterly Journal of Economics*, 2004, 119 (4), 1383–1441.
- Diouf, Sylvaine A.**, *Fighting the Slave Trade: West African Strategies*, Athen, OH: Ohio University Press, 2003.
- DiPasquale, Denise and Edward L. Glaeser**, “The Los Angeles Riot and the Economics of Urban Unrest,” *Journal of Urban Economics*, January 1998, 43 (1), 52–78.
- Dodd, Vikram**, “Cost of English Riots Much Higher than First Thought, Met Police Report Suggests,” *The Guardian*, 2011.
- Downes, Bryan T.**, “Social and Political Characteristics of Riot Cities: A Comparative Study,” *Social Science Quarterly*, 1968, 49 (3), 504–520.
- Eltis, David and David Richardson**, “Prices of African Slaves Newly Arrived in the Americas, 1673-1865: New Evidence on Long-Run Trends and Regional Differentials,” in Frank D. Lewis David Eltis and Kenneth L. Sokoloff, eds., *Slavery in the Development of the Americas*, Cambridge, UK: Cambridge University Press, 2004.
- Engerman, Stanley and Kenneth L. Sokoloff**, “Factor Endowments, Institutions and Differential Paths of Growth among New World Economies: A View from Economic Historians of the United States,” in Stephen Haber, ed., *How Latin America Fell Behind*, Stanford, CA: Stanford University Press, 1997.
- Engerman, Stanley L. and Kenneth L. Sokoloff**, *Factor Endowments, Inequality, and Paths of Development among New World Economies*, Cambridge, MA: NBER, 2002.
- , **Eugene D. Genovese, and Alan H. Adamson**, *Race and Slavery in the Western Hemisphere; Quantitative Studies*, Princeton, NJ: Princeton University Press, 1975.
- Equiano, Olaudah**, *The Interesting Narrative of the Life of Olaudah Equiano, Or Gustavus Vassa, The African*, Project Gutenberg, 1794.
- Esteban, Joan and Debraj Ray**, “On the Saliency of Ethnic Conflict,” *American Economic Review*, 2008, 95 (5), 2185–2202.
- Evans, E. W. and David Richardson**, “Hunting for Rents: The Economics of Slaving in Pre-Colonial Africa,” *The Economic History Review*, 1995, 48 (4), 665–686.

Fairchild, Byron and Jonathan Grossman, *United States Army in World War II. The War Department: The Army and Industrial Manpower*, Washington, D.C.: Center of Military History, Department of the Army, 1988.

Farber, Henry S. and Bruce Western, “Accounting for the Decline of Unions in the Private Sector, 1973-1998,” *Journal of Labor Research*, 2001, 22 (3), 459–485.

— **and** —, “Ronald Reagan and the Politics of Declining Union Organization,” *British Journal of Industrial Relations*, 2002, 40 (3), 385–401.

Felix, Marc L. and Charles Meur, *Peoples of Africa: Ethnolinguistic Map*, Brussels, BE: Congo Basin Art History Center, 2001.

Firmin-Sellers, Kathryn, *The Transformation of Property Rights in the Gold Coast*, Cambridge, UK: Cambridge University Press, 1996.

Flanagan, Richard, “The Great Society Reform Struggle,” April 1998.
<http://www.h-net.org/>.

Food and Allied Service Trades, *AFL-CIO FAST Organizing Database*, Washington, D.C.: AFL-CIO, 2000.

Freeman, Richard B., “The Effect of the Union Wage Differential on Management Opposition and Union Organizing Success,” *American Economic Review*, 1986, 76 (2), 92–96.

—, “Spurts in Union Growth: Defining Moments and Social Processes,” in Claudia Goldin Michael R. Bordo and Eugene N. White, eds., *The Defining Moment: The Great Depression and the American Economy in the Twentieth Century*, Cambridge, MA: NBER, 1998.

— **and Robert Valletta**, “The NBER Public Sector Collective Bargaining Law Data Set,” in Richard B. Freeman and Casey Ichniowski, eds., *When Public Sector Workers Unionize*, Chicago, IL: University of Chicago Press, 1988.

Friedman, Gerald, “New Estimates of United States Union Membership, 1880-1914,” *Historical Methods*, 1999, 32 (2), 75–86.

—, “The Political Economy of Early Southern Unionism: Race, Politics, and Labor in the South, 1880-1914,” *Journal of Economic History*, 2000, 60 (2), 384–413.

Galenson, David W., *White Servitude in Colonial America*, Cambridge, UK: Cambridge University Press, 1981.

—, “Economic Aspects of the Growth of Slavery in the Seventeenth Century Chesapeake,” in Barbara Solow, ed., *Slavery and the Rise of the Atlantic System*, Cambridge, UK: Cambridge University Press, 1991.

Gallup Organization, “Gallup Poll 1937-0074,” 1937.

—, “Gallup Poll 1937-0086,” 1937.

—, “Gallup Poll 1937-0098,” 1937.

—, “Gallup Poll 1937-0345,” 1945.

—, “Gallup Poll 1937-0353,” 1945.

—, “Gallup Poll 1937-0356,” 1945.

—, “Gallup Poll 1937-0362,” 1945.

Garlock, Jonathan, *Knights of Labor Assemblies, 1879-1889*, Ann Arbor, MI: ICPSR, 2009.

Gemery, H. A. and J. S. Hogendorn, “Elasticity of Slave Labor Supply and the Development of Slave Economies in the Caribbean : the Seventeenth Century Experience,” in V. Rubin and T. Tuden, eds., *Comparative Perspectives on Slavery in New World Plantation Societies*, New York, NY: New York Academy of Sciences, 1977.

— **and Jan Hogendorn**, “The Atlantic Slave Trade: A Tentative Economic Model,” *The Journal of African History*, 1974, 15 (1), 223–246.

— **and —**, “Evidence on English/African Terms of Trade and 18th Century,” *Explorations in Economic History*, 1990, 27 (1), 157–177.

Germany, Kent B., “War on Poverty,” in Gwendolyn Mink and Alice O’Connor, eds., *Poverty in the United States: An Encyclopedia of History, Politics, and Policy*, Santa Barbara, Calif.: ABC-CLIO, 2004.

Ginzberg, Eli and Robert M. Solow, *The Great Society: Lessons for the Future*, New York, NY: Basic Books, 1974.

Griffith, Barbara, *The Crisis of American Labor: Operation Dixie and the Defeat of the CIO*, Philadelphia: Temple University Press, 1988.

Gropman, Alan L., *Mobilizing US Industry in World War II*, DAINÉ Publishing, 1996.

Gurr, Ted Robert, *Why Men Rebel.*, Princeton, N.J.: Princeton University Press, 1971.

Harris, Fred R. and Roger W. Wilkins, *Quiet Riots: Race and Poverty in the United States*, New York, NY: Pantheon Books, 1988.

Hirsch, Barry T., “Unions, Dynamism, and Economic Performance,” in Cynthia Estlund and Michael Wachter, eds., *Research Handbook on the Economics of Labor and Employment Law*, Edward Elgar Publishing, 2012.

— **and David A. Macpherson**, “Union Membership and Coverage Database from the Current Population Survey: Note,” *Industrial and Labor Relations Review*, 2003, 56 (2), 349–354.

— **and Mark C. Berger**, “Union Membership Determination and Industry Characteristics,” *Southern Economic Journal*, 1984, 50 (3), 655–679.

- Hobolt, Sara B. and Robert Klemmensen**, “Welfare to Vote: The Effect of Government Spending on Turnout,” *Mimeo* 2005.
- Holmes, Thomas J.**, “Geographic Spillover of Unionism,” *Federal Reserve Bank of Minneapolis*, 2006.
- Hopkins, Antony G.**, “The New Economic History of Africa,” *Journal of African History*, 2009, 50 (1), 155–177.
- Hoynes, Hilary W. and Diane Whitmore Schanzenbach**, “Consumption Responses to In-Kind Transfers: Evidence from the Introduction of the Food Stamp Program,” *American Economic Journal: Applied Economics*, 2009, 1 (4), 109–39.
- Huberman, Michael and Denise Young**, “Hope Against Hope: Strike Activity in Canada, 1920-1939,” *Explorations in Economic History*, 2002, 39, 315–354.
- ICPSR**, *United States Congressional District Data Books, 1961-1965*, Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 1973.
- , *County and city data book (United States) consolidated file: city data 1944-1977, technical documentation*, Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 1981.
- , *General Election Data for the United States, 1950-1990*, Ann Arbor, MI: Inter-university Consortium for Political and Social Research, 1984.
- Inikori, J. E.**, “The New Economic History of Africa,” *Journal of African History*, 1977, 18 (3), 339–368.
- , *Africans and the Industrial Revolution in England: A Study in International Trade and Economic Development*, Cambridge, UK: Cambridge University Press, 2002.
- Johnson, Susan**, “Canadian Union Density 1980 to 1998 and Prospects for the Future: An Empirical Investigation,” *Canadian Public Policy*, 2002, 28 (3), 17–33.
- , “An Empirical Examination of Union Density in Six Countries: Canada, Ecuador, Mexico, Nicaragua, the United States and Venezuela,” in P. Kuhn and G. Marquez, eds., *What Difference Do Unions Make?*, Washington, D.C: Inter-American Development Bank.
- Kang, Woo Chang**, “Electoral Cycles in Pork Barrel Politics: Evidence from South Korea 1989-2008,” *SSRN Working Paper 2543759* 2014.
- Kea, R. A.**, “Firearms and Warfare on the Gold and Slave Coasts from the Sixteenth to the Nineteenth Centuries,” *Journal of African History*, 1971, 21 (2), 185–213.
- Kemmerer, Donald L. and Edward D. Wickersham**, “Reasons for the Growth of the Knights of Labor in 1885-1886,” *Industrial and Labor Relations Review*, 1950, 3 (2), 213–220.
- Kersten, Andrew E.**, *Race, Jobs, and the War: The FEPC in the Midwest, 1941-1946*, Chicago, IL: University of Illinois Press, 2000.

- Klein, Herbert**, *The Atlantic Slave Trade*, Cambridge, UK: Cambridge University Press, 2007.
- Koeller, Timothy C.**, “Union Activity and Decline in American Trade Union Membership,” *Journal of Labor Research*, 1994, 15 (1), 19–32.
- Laan, L. Van Der**, “Regional Differentiation in Trade Union Density,” *Environment and Planning*, 1993, 25 (2), 255–272.
- Lalonde, Robert J. and Bernard D. Meltzer**, “Hard Times for Unions: Another Look at the Significance of Employer Illegalities,” *University of Chicago Law Review*, 1991, 53 (3), 953–1014.
- Lange, Matthew**, “British Colonial Legacies and Political Development,” *World Development*, 2004, 3 (6), 905–922.
- Lee, David S. and Alexandre Mas**, “Long-Run Impacts of Unions on Firms: New Evidence from Financial Markets, 1961-1999,” *Quarterly Journal of Economics*, 2012., 127 (1), 333–378.
- , **Enrico Moretti, and Matthew J. Butler**, “Do Voters Affect or Elect Policies? Evidence from the U. S. House,” *Quarterly Journal of Economics*, 2004, 119 (3), 807–859.
- LeVeen, Phillip E.**, “The African Slave Supply Response,” *African studies Review*, 1975, 18 (1), 8–28.
- Levine, Robert and William Easterly**, “Africa’s Growth Tragedy: Policies and Ethnic Divisions,” *The Quarterly Journal of Economics*, 1997, 112 (4), 1203–1250.
- Levitan, Sar A.**, “The Community Action Program: A Strategy to Fight Poverty,” *Annals of the American Academy of Political and Social Science*, 1969, 385, 63–75.
- Levitt, Steven D. and James M. Snyder**, “The Impact of Federal Spending on House Election Outcomes,” *The Journal of Political Economy*, 1997, 105 (1), 30–53.
- Lieberson, Stanley and Arnold R. Silverman**, “The Precipitants and Underlying Conditions of Race Riots,” *American Sociological Review*, 1965, 30 (6), 887–898.
- Lovejoy, Pauk E.**, *Transformations in Slavery : A History of Slavery in Africa*, New York, NY: Cambridge University Press, 2000.
- Ludwig, Jens and Douglas L. Miller**, “Does Head Start Improve Children’s Life Chances? Evidence from a Regression Discontinuity Design,” *Quarterly Journal of Economics*, 2007, 122 (1), 159–208.
- Martin, Ron, Peter Sunley, and Jane Wills**, “The Geography of Trade Union Decline: Spatial Dispersal or Regional Resilience?,” *Transactions of the Institute of British Geographers*, 1993, 18 (1), 36–62.
- , – , and – , *Union Retreat and the Regions: The Shrinking Landscape of Organised Labour*, New York, NY: Routledge New Edition, 2002.

- Meillassoux, Claude**, *The Development of Indigenous Markets in West Africa*, Oxford, UK: Oxford University Press, 1971.
- Michney, Todd M.**, “Race, Violence, and Urban Territoriality: Cleveland’s Little Italy and the 1966 Hough Uprising,” *Journal of Urban History*, 2006, 32 (3), 404–428.
- Miguel, Edward**, “Poverty and Witch Killing,” *The Review of Economic Studies*, 2005, 72 (4), 1153–1172.
- Mitchell, Clarence**, *The Papers of Clarence Mitchell Jr: Volume 1, 1942-1943*, Columbus, OH: Ohio University Press, 2005.
- Moore, William J. and Robert J. Newman**, “A Cross-Section Analysis of the Postwar Decline in American Trade Union Membership,” *Journal of Labor Research*, 1988, 9 (2), 111–125.
- Moriguchi, Chiaki**, “The Evolution of Employment Relations in US and Japanese Manufacturing Firms, 1900-1960: A Comparative Historical and Institutional Analysis,” NBER Working Paper 7939, 2000.
- Mullahy, John**, “Instrumental-Variable Estimation of Count Data Models: Applications to Models of Cigarette Smoking Behavior,” *Review of Economics and Statistics*, 1997, 79 (4), 586–593.
- Muller, Christophe**, “Anti-Poverty Transfers without Riots in Tunisia,” *THEMA Working Papers 2008-15*, Universit de Cergy-Pontoise 2008.
- Murdock, George P.**, *Africa: Its People and their Culture*, New York, NY: McGraw-Hill, 1959.
- Myers, Daniel J.**, “Racial Rioting in the 1960S: An Event History Analysis of Local Conditions,” *American Sociological Review*, 1997, 62 (1), 94–112.
- Nellis, Michael Weaver Gareth and Steven Rosenzweig**, “Do parties matter for ethnic violence? Evidence from India,” *Mimeo* 2014.
- Nunn, Nathan**, “Historical Legacies: A Model Linking Africa’s Past to Its Current Underdevelopment,” *Journal of Development Economics*, 2007, 83 (1), 157–175.
- , “The Long Term Effects of Africa’s Slave Trades,” *Quarterly Journal of Economics*, 2008, 123 (1), 139–176.
- , “Slavery, Inequality, and Economic Development in the Americas: An Examination of the Engerman-Sokoloff Hypothesis,” in E. Helpman, ed., *Institutions and Economic Performance*, Cambridge, UK: Harvard University Press, 2008.
- **and Leonard Wantchekon**, “The Slave Trade and the Origins of Mistrust in Africa,” *American Economic Review*, 2011, 101 (7), 3221–3252.
- Olson, Mancur**, “Rapid Growth as a Destabilizing Force,” *Journal of Economic History*, 1963, 23 (1), 529–552.

- Olzak, Susan, Suzanne Shanahan, and Elizabeth H. McEneaney**, “Poverty, Segregation, and Race Riots: 1960 to 1993,” *American Sociological Review*, 1996, 61 (4), 590–613.
- Paden, Catherine M.**, *Civil Rights Advocacy on Behalf of the Poor*, University of Pennsylvania Press, 2011.
- Palley, Thomas and Robert M. LaJeunesse**, “Social Attitudes, Labor Law, and Union Organizing: Toward a New Economics of Union Density,” *Journal of Economic Behavior and Organization*, 2007, 62 (2), 237–254.
- Parks, Brad**, “Crossroads Pt. 2: 5 days that changed a city,” *The Star Ledger*, 2007.
- Pehkonen, Jaakko and Hannu Tanninen**, “Institutions, Incentives and Trade Union Membership,” *Labour*, 1997, 11 (3), 579–598.
- Posner, Daniel N.**, *Institutions and Ethnic Politics in Africa*, Cambridge, UK: Cambridge University Press, 2005.
- Price, Jacob M.**, “Credit in the Slave Trade and Plantation Economies,” in Barbara Solow, ed., *Slavery and the Rise of the Atlantic System*, Cambridge, UK: Cambridge University Press, 1991.
- Quadagno, Jill**, *The Color of Welfare: How Racism Undermined the War on Poverty*, Oxford University Press, USA, 1994.
- Rees, Albert**, *The Economics of Trade Unions*, University of Chicago Press, 1962.
- Reeves, Richard**, “Lindsay Attacks Poverty-Fund Cuts,” *New York Times*, 1968.
- Rehavi, Marit M.**, “Sex and politics: Do Female Legislators Affect State Spending?,” Mimeo, Department of Economics, University of Michigan 2008.
- Richards, W. A.**, “The Import of Firearms into West Africa in the Eighteenth Century,” *The Journal of African History*, 1980, 21 (1), 43–59.
- Richardson, David**, “Prices of Slaves in West and West Central Africa: Towards an Annual Series, 1698-1807,” *Bulletin of Economic Research*, 1991, 41 (1), 21–56.
- Riddell, Craig W.**, “Unionization in Canada and the United States: A tale of Two Countries,” in David Card and Richard B. Freeman, eds., *Small Differences that Matter: Labor Markets and Income Maintenance in Canada and the United States*, Cambridge, MA: NBER, 1993.
- Rodney, Walter**, *How Europe Underdeveloped Africa*, London, UK: Bogle-L’Ouverture Publications, 1972.
- Rosenbloom, Joshua L.**, “Strikebreaking and the Labor Market in the United States, 1881-1894,” *The Journal of Economic History*, 1998, 58 (1), 183–205.
- Schnabel, Claus**, “Union Membership and Density: Some (Not So) Stylized Facts and Challenges,” *European Journal of Industrial Relations*, 2013, 19 (3), 255–272.

- **and Joachim Wagner**, “Determinants of Union Membership in 18 EU Countries: Evidence from Micro Data, 2002/03s,” IZA Working Paper 1464, 2005.
- Schumpeter, Elizabeth**, *English Overseas Trade Statistics, 1697-1808s*, London, UK: Oxford University Press, 1960.
- Sears, David O. and John B. McConahay**, *The Politics of Violence; the New Urban Blacks and the Watts riot*, Boston, MA: Houghton Mifflin, 1973.
- Shorter, Edward and Charles Tilly**, *Strikes in France, 1830-1968*, Cambridge: Cambridge University Press, 1974.
- Singer, Benjamin D., Richard W. Osborn, and James A. Geschwender**, *Black Rioters; A Study of Social Factors and Communication in the Detroit Riot*, Lexington, MA.: Heath Lexington Books, 1970.
- Sirianni, Carmen and Lewis Friedland**, “Social Capital and Civic Innovation: Learning and Capacity Building from the 1960s to the 1990s,” *American Sociological Association Annual Meetings*, 1995.
- Solow, Barbara L and Stanley L. Engerman**, *British Capitalism and Caribbean Slavery : The Legacy of Eric Williams*, Cambridge, UK: Cambridge University Press, 1987.
- Sowell, Thomas**, “War on Poverty Revisited,” *Capitalism Magazine*, August 2004.
- Spence, Michael**, “Job Market Signaling,” *The Quarterly Journal of Economics*, 1973, 87 (3), 355–374.
- Spilerman, Seymour**, “Structural Characteristics of Cities and the Severity of Racial Disorders,” *American Sociological Review*, 1976, 41 (5), 771–793.
- Sprinkles, Ernie**, “Watts Riot in Review: What Good Did It Do?,” *Los Angeles Sentinel*, 1971.
- Stepan-Norris, Judith and Caleb Southworth**, “Rival Unionism and Membership Growth in the United States, 1900 to 2005,” *American Sociological Review*, 2010, 75 (2), 227–251.
- Sundquist, James L.**, “Co-ordinating the War on Poverty,” *Annals of the American Academy of Political and Social Science*, 1969, 385, 41–49.
- Taschereau-Dumouchel, Mathieu**, “The Union Threat,” in *mimeo*, 2012.
- Teller, Ludwig**, “Government Seizure in Labour Disputes,” *Harvard Law Review*, 1947, 40 (7), 1017–1059.
- Thomas, Robert P. and Richard N. Bean**, “The Fishers of Men: The Profits of the Slave Trade,” *The Journal of Economic History*, 1974, 34 (4), 885–914.
- Thornton, John**, *Africa and Africans in the Making of the Atlantic World, 1400- 1800*, Cambridge, UK: Cambridge University Press, 1998.

- Troy, Leo**, “*Union Membership, 1939 and 1953*,” *NBER*, 1957.
- Unknown**, “*OEO Seeks to Disprove Riot Charges Leveled Against Anti-Poverty Program*,” *Chicago Defender*, 1967.
- , “*Say Demonstrator Assaulted Officer*,” *New York Amsterdam News*, 1967.
- , “*23 Held as Negroes Rally in Hartford*,” *New York Times*, 1968.
- , “*Flash Point: Racial Tension in Summer of 1967 Fueled Deadly Violence*,” *Milwaukee Journal Sentinel*, 2007.
- U.S. Department of Commerce**, *County and City Data Books (1944-2000)*, Ann Arbor, MI: ICPSR, 2000.
- U.S. Government**, *Biennial Census of Manufacturers 1937*, Washington, D.C.: U.S. Government Printing, 1937.
- , *Biennial Census of Manufacturers 1947*, Washington, D.C.: U.S. Government Printing, 1947.
- US Riot Commission**, “*Report of the National Advisory Commission on Civil Disorders*,” Washington, DC: U.S. Government Printing Office 1968.
- U.S. War Manpower Commission**, *List and Index of Essential Activities*, Washington, D.C.: U.S. Government Printing, 1942.
- USA**, *Compilation of the Economic Opportunity Act of 1964, as amended through July 6, 1976*, Washington DC: U.S. Govt. Print. Off., 1976.
- Vadlamannati, Krishna Chaitanya**, “*Does Timing Of Elections Instigate Riots? A Subnational Study Of 16 Indian States, 1958-2004*,” *William Davidson Institute Working Papers Series wp939*, William Davidson Institute at the University of Michigan Stephen M. Ross Business School 2008.
- Vigdor, Jacob**, “*The Economic Aftermath of Hurricane Katrina*,” *Journal of Economic Perspectives*, 2009, 22 (4), 135–154.
- Visser, Jelle**, *European Trade Unions in Figures*, Boston: Kluwers, 1989.
- Weiler, Paul C.**, “*Promises to Keep: Securing Workers’ Rights Under the NLRA*,” *Harvard Law Review*, 1957, 96 (1), 1769–1727.
- Whatley, Warren and Rob Gillezeau**, “*The Fundamental Impact of the Slave Trade on African Economies*,” in *J.Rosenbloom P. Rhode and D. Weiman, eds., Economic Evolution and Revolution in Historical Time*, Stanford, CA: Stanford University Press, 2011.
- **and** —, “*The Impact of the Transatlantic Slave Trade on Ethnic Stratification in Africa*,” *American Economic Review*, 2011, 101 (3), 571–576.
- White, Gavin**, “*Firearms in Africa*,” *The Journal of African History*, 1971, 12 (2), 173–184.

- Wilkinson, Steven**, *Votes and Violence: Electoral Competition and Ethnic Riots in India*, Cambridge, UK: Cambridge University Press, 2004.
- Wilks, Ivor**, *Asante in the Nineteenth Century : The Structure and Evolution of a Political Order*, African Studies Series, New York, NY: Cambridge University Press, 1975.
- , “Wangara, Akan and Portuguese in the 15th and 16th Centuries, Ii: The Struggle for Trade,” *The Journal of African History*, 1982, 23 (4), 463–472.
- Williams, Eric**, *Capitalism and Slavery*, Chapel Hill, NC: University of North Carolina Press, 1944.
- Wills, Jane**, “Uneven Reserves: Geographies of Banking Trade Unionism,” *Regional Studies*, 1996, 30 (4), 359–372.
- , “Community Unionism and Trade Union Renewal in the UK: Moving Beyond the Fragments at Last?,” *Transactions of the Institute of British Geographers*, 2002, 26 (4), 465–483.
- Zeman, William F.**, “Today in D.C. History: Rioting Spreads Following MLKs Assassination,” *Washington City Paper*, 2011.
- Zolberg, Aristide**, “Moment of Madness,” *Politics and Society*, 1972, 2 (4), 183–207.